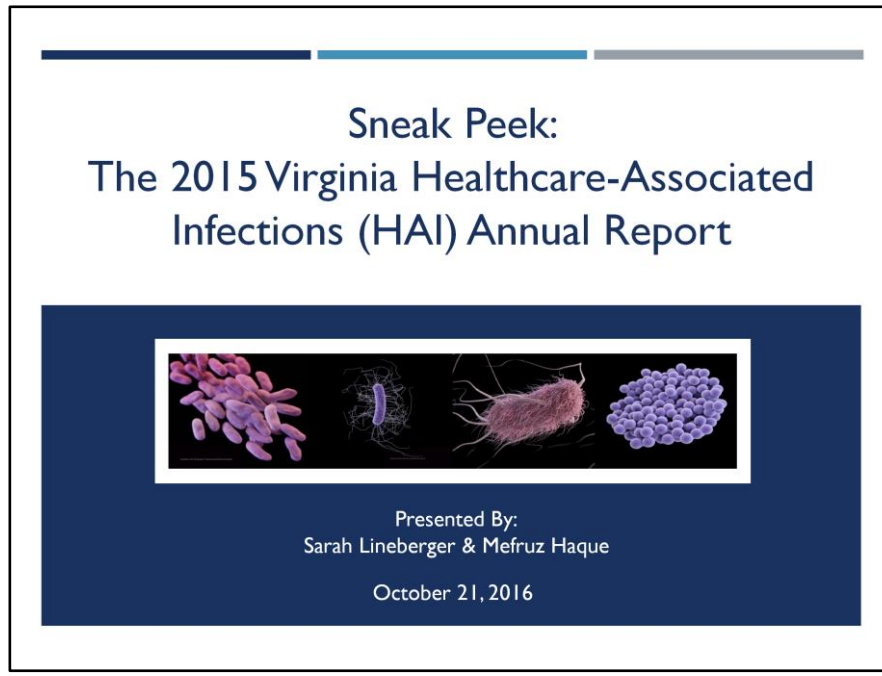
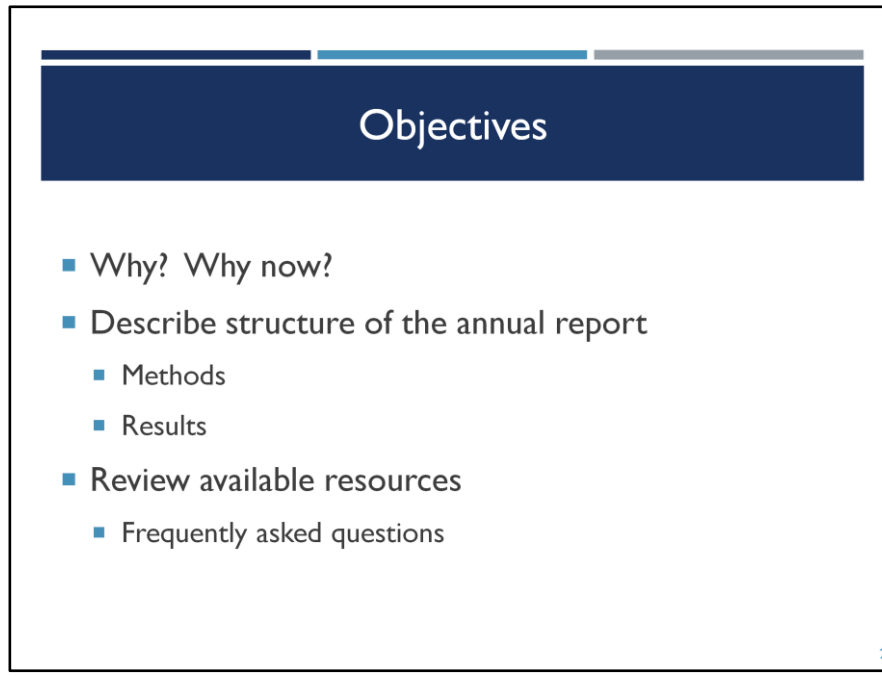
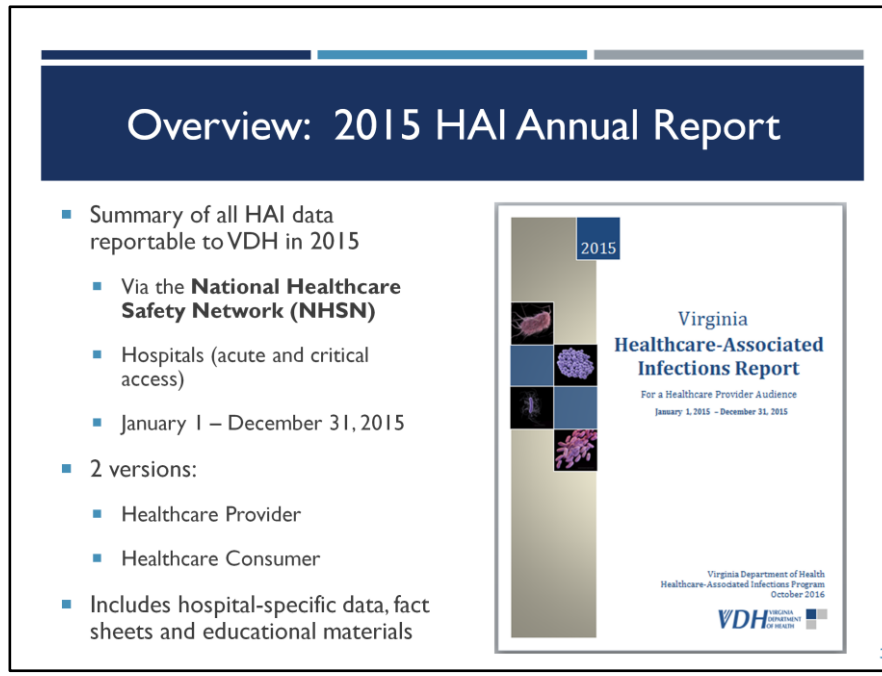



Good afternoon and welcome to a Sneak Peek of the 2015 Virginia Healthcare-Associated Infections Annual Report.
I'm Sarah Lineberger, the HAI Epidemiologist at the Virginia Department of Health, and with me is Mefruz Haque, our CDC/CSTE Applied Epidemiology Fellow.
We will be going back and forth as we share information with you today.



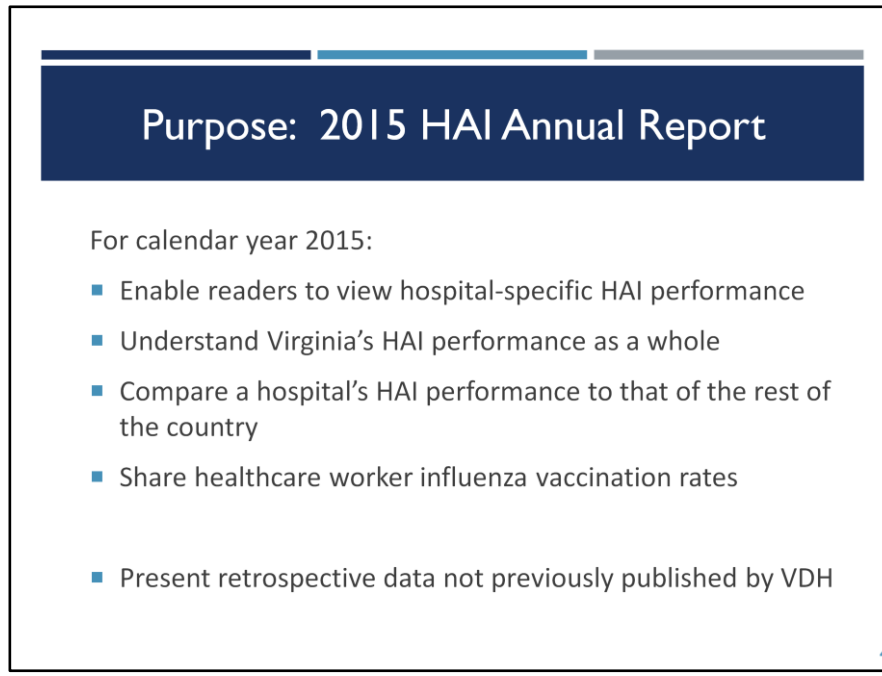

Today we want to talk about why we did this report, give you an idea of what's in the report (because at 124 pages it is lengthy), and talk about resources you can use if you need to present data or answer questions about the report.




In a nutshell, the report is a summary of all the HAI data that was reportable to VDH from hospitals in calendar year 2015. All the data in the report was submitted by the hospitals through NHSN, the National Healthcare Safety Network.

There are 2 versions of the report, one for providers and one for consumers, and we will be pointing out some content differences between the two versions.

There is a lot of information in the report beyond just the data, so we're going to direct you to some of those resources.

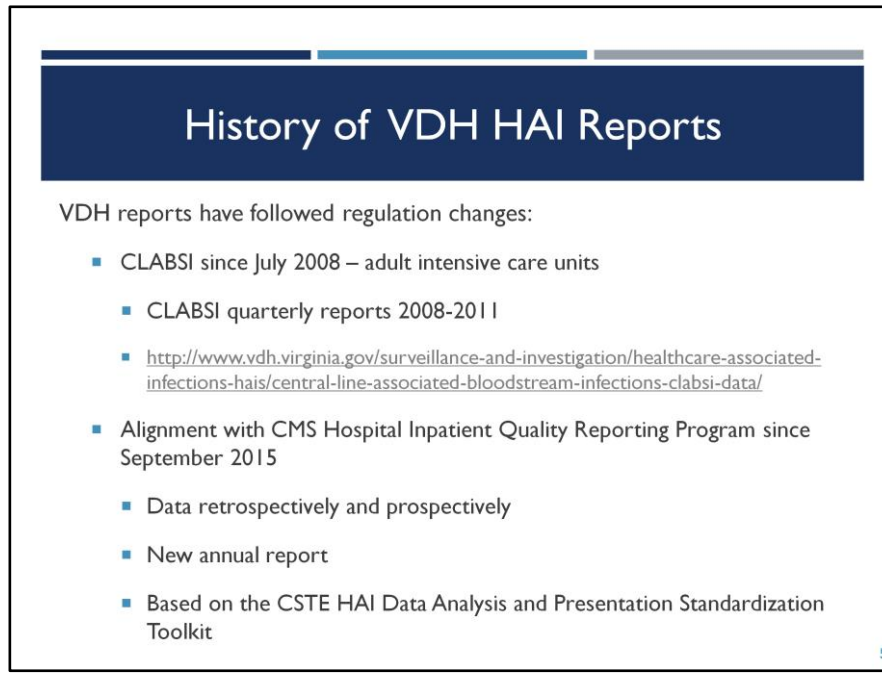



The purpose of this report is to enable readers to view the performance of their hospital with regards to HAIs in 2015. The goal of the report was not to rank hospitals but to understand Virginia's HAI performance as a whole, as well as to compare each hospitals performance to that of the rest of the country using national baselines.

The measures presented in the report do not represent all possible HAIs. They were selected by the federal government and VDH because they give a good overview of how a hospital is doing in preventing HAIs. **HAIs are largely preventable when healthcare providers use recommended infection prevention steps.**

With this report we also wanted to share healthcare worker influenza vaccination rates for Virginia and at the individual hospital level. **It is recommended by CDC and VDH that all personnel who work in a healthcare setting receive the influenza vaccine each year to protect patients and staff.**

The report also contains some retrospective data, and I'm going to talk more about that on the next slide.




CLABSIs have been reportable to VDH since July 2008 for adult intensive care units. From 2008 through 2011, the VDH HAI program produced quarterly CLABSI reports, and those can be found on our website.

In September 2015, the Regulations for Disease Reporting and Control were updated to align state HAI reporting requirements with those of the Centers for Medicare and Medicaid Services Hospital Inpatient Quality Reporting Program. That means that last fall, VDH received all the data hospitals had been reporting to CMS over the last several years, as well as prospective data. This new annual report now covers all the data we're getting, and we included some of the retrospective data because VDH hasn't previously published it.

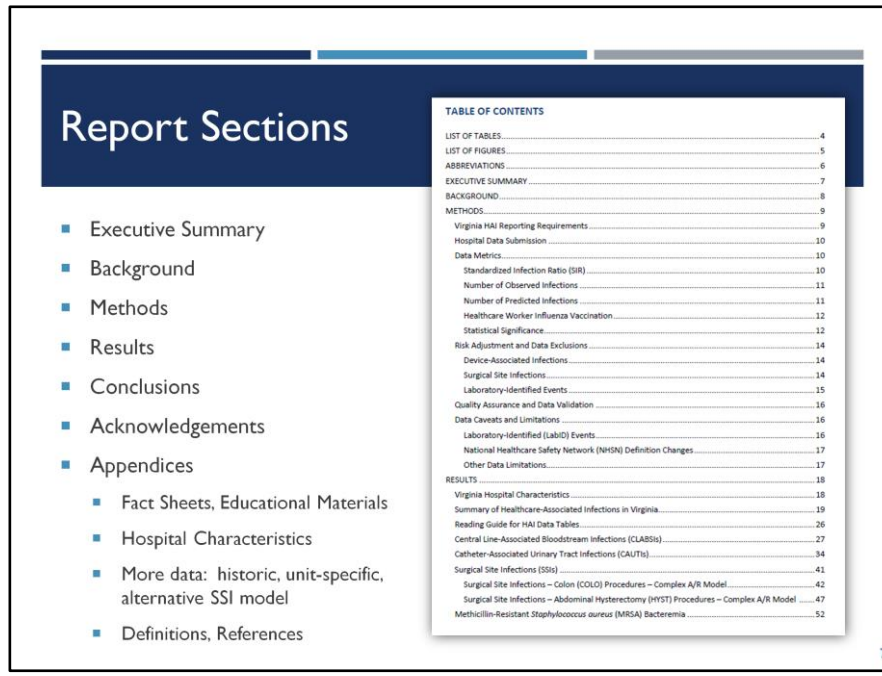
This report is based on national guidelines laid out in the CSTE HAI Data Analysis and Presentation Standardization Toolkit.

## Data Reported to VDH

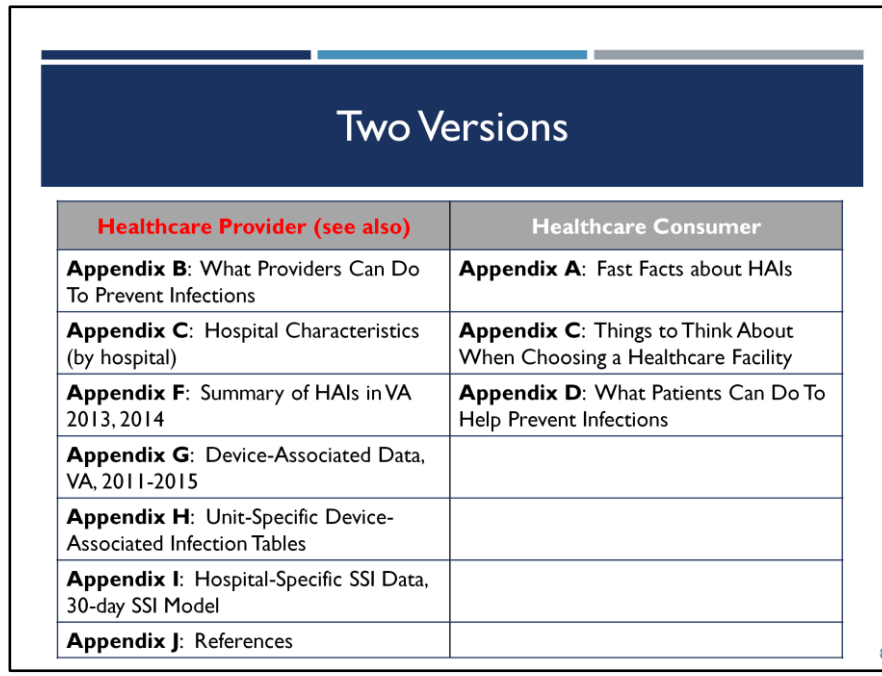
| HAI Event | Applicable Units | Reporting Start Date |
|---|---|---|
| CLABSIs | Adult, pediatric, and neonatal ICUs | July 2008 |
| | Adult and pediatric medical, surgical and medical/surgical inpatient wards | January 2015 |
| CAUTIs | Adult, pediatric, and neonatal ICUs | January 2012 |
| | Adult and pediatric medical, surgical and medical/surgical inpatient wards | January 2015 |
| SSIs following colon procedures | Inpatient Procedures | January 2012 |
| SSIs following abdominal hysterectomies | Inpatient Procedures | January 2012 |
| MRSA Bacteremia LabID Events | Facility wide inpatients including ED, 24 hour observation | January 2013 |
| *C. Difficile* LabID Events | Facility wide inpatients including ED, 24 hour observation | January 2013 |
| Healthcare Personnel Flu Vaccination | All inpatient healthcare personnel | January 2013 |

6

This chart describes the type of data that we receive from hospitals and they also report all this data to CMS. To understand what data we've gotten retrospectively, see the reporting start date column.




This slide directs you to the Table of Contents, and the sections included in the report. We will be reviewing Methods and Results by infection type today, as well as pointing out resources available in the appendices.



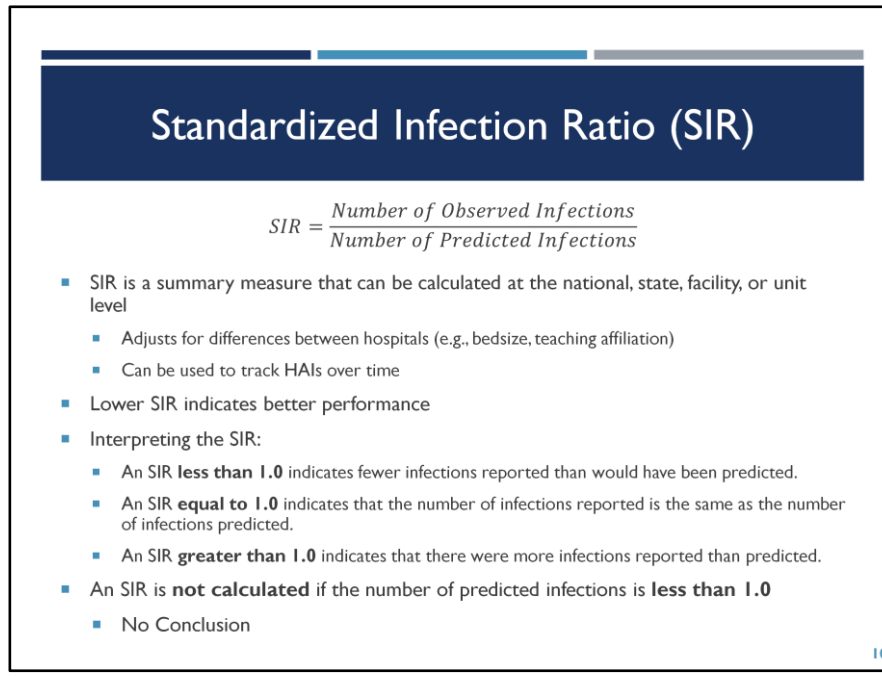

As I said, there are 2 versions of the report. The data in the body of the report is essentially the same in both versions, with plainer language and less detail in the consumer version.

The resources in the appendices differ significantly between the two versions. The consumer version has some really nice fact sheets that are geared towards consumers and that could be used as stand alone resources or to adapt for your own resources.

The appendices in the provider version include a lot more additional data, including some historic data, device-associated data stratified by unit type, SSI data using a different model (which we will discuss in more detail), as well as references and a fact sheet for providers.

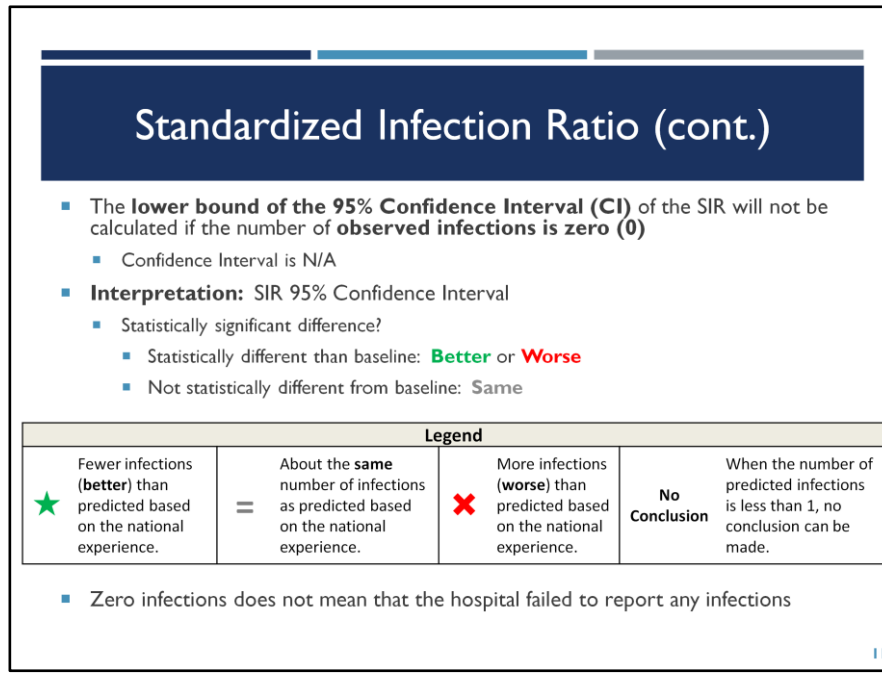
Throughout the rest of the presentation, we will refer you to the appendices for more information, and that will be in red text.


Really quickly, because we have a mixed audience, we'll talk about some overall methods.




The SIR, or Standardized Infection Ratio, is the number of observed infections in a specified time period over the number of infections that were predicted to occur in a facility, based on the national experience during the baseline time period.

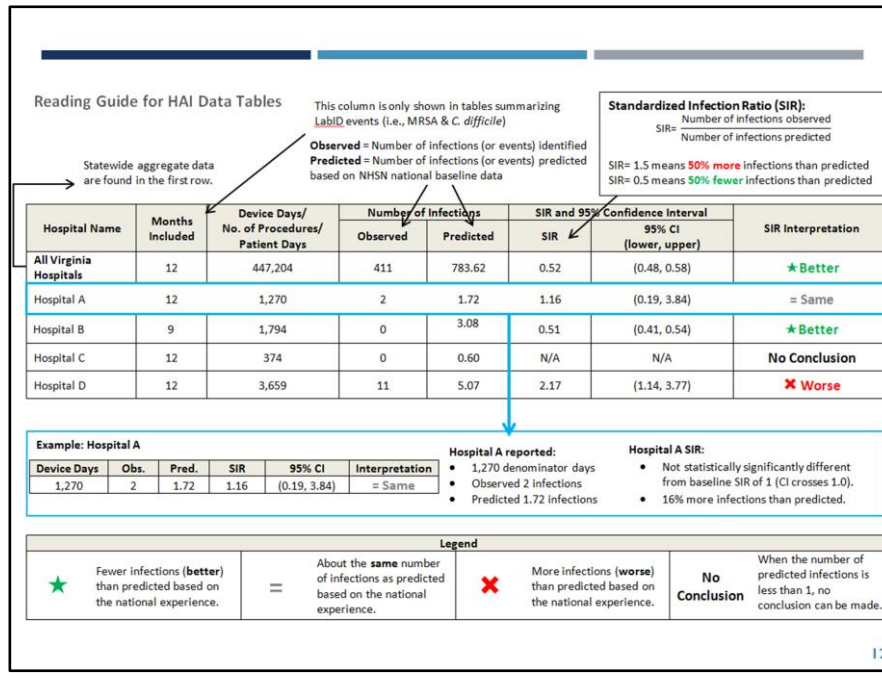
The SIR is a risk-adjusted measure. We will not be getting into the details of the risk adjustment in this presentation, but there are more details in the methods section of the report.




The report presents the SIR, and the interpretation of the SIR compared to the national baseline. The 95% Confidence Interval was used to determine statistical significance.

If the SIR is statistically different than the baseline, than it is labeled as either better or worse. Better if there were fewer infections than predicted (in other words the SIR is less than 1), and worse if there were more infections than predicted (in other words, the SIR is greater than 1). If the SIR is not statistically different than the baseline (in other words, the Confidence Interval crosses 1), than the SIR is considered to show about the same number of infections as predicted.

The legend shown on this slide is used consistently throughout the report.

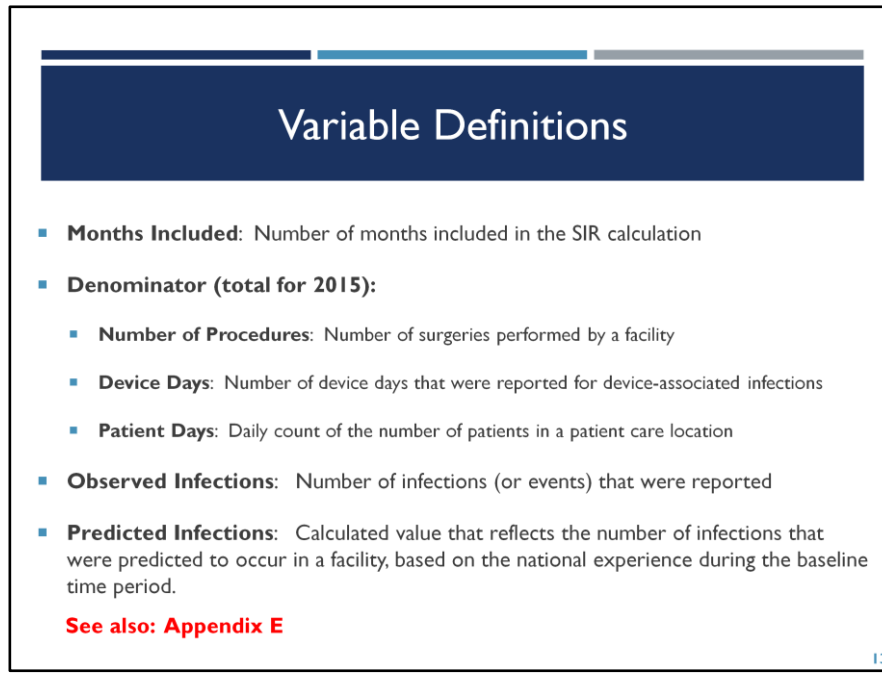



This reading guide is a screenshot from the healthcare provider version, and represents the layout of the data tables found throughout the report.

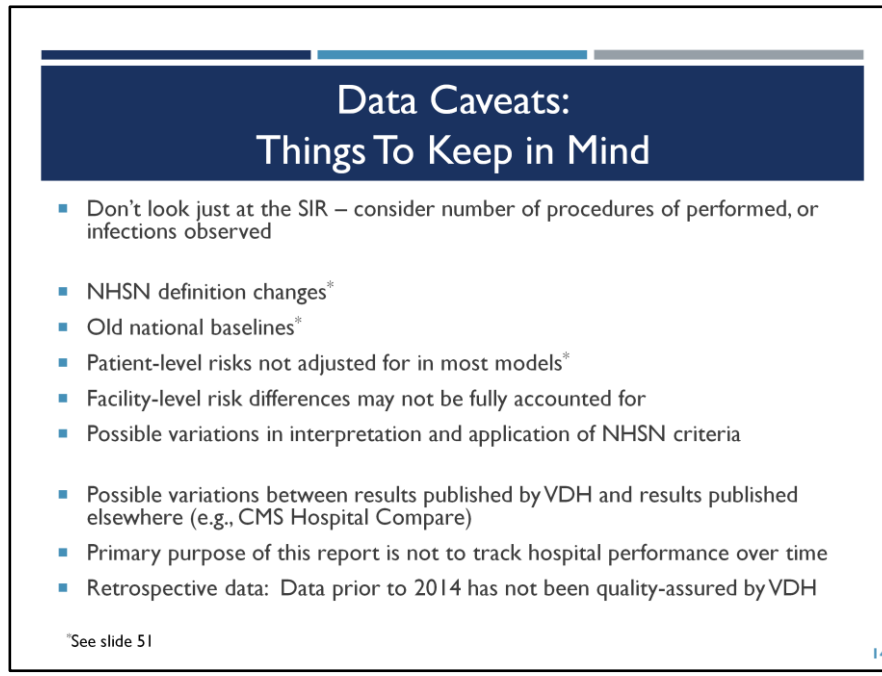
Each HAI infection type (such as CLABSIs, SSIs) has a section with corresponding data tables.

Each data table will include a line for each hospital, the corresponding denominator value (i.e., device days or number of procedures performed), the number of infections observed in that facility, the number of infections predicted for that facility, the SIR, and the interpretation of the SIR.

Note that the top row is for all Virginia hospitals; the statewide total row is found consistently throughout the report.



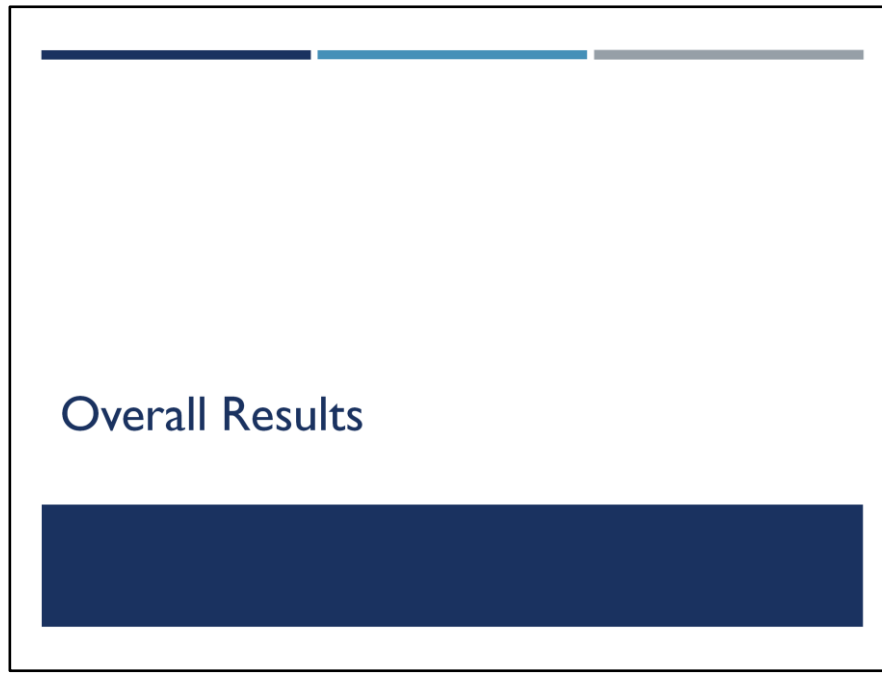

Here are some variable definitions, and there is a more extensive list in Appendix E. The denominator is dependent on the type of infection you are looking at, for example, for surgeries, the denominator would be number of procedures.




As you know, the NHSN surveillance definitions aren't perfect.

The data presented in this report is based on old national baselines, and there have been many surveillance definition changes since the baselines were updated. The system only collects a limited amount of patient-level data, thus the risk-adjustment isn't perfect.

We go into these data limitations in the methods section. Keep in mind that the primary purpose of this report is not to track hospital performance over time, but to compare each hospital and the state against national benchmarks.




Let’s discuss some statewide results.

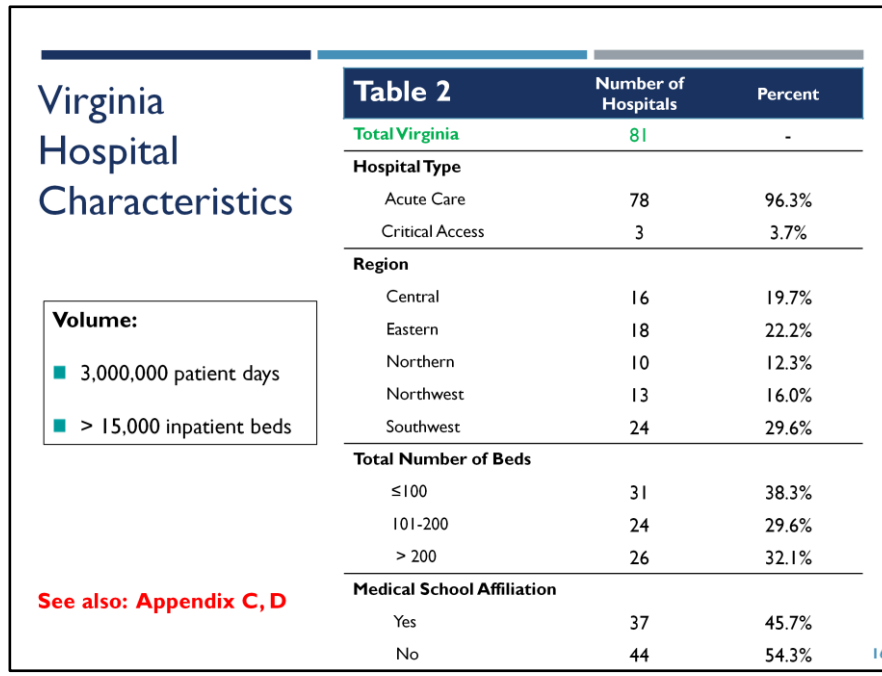


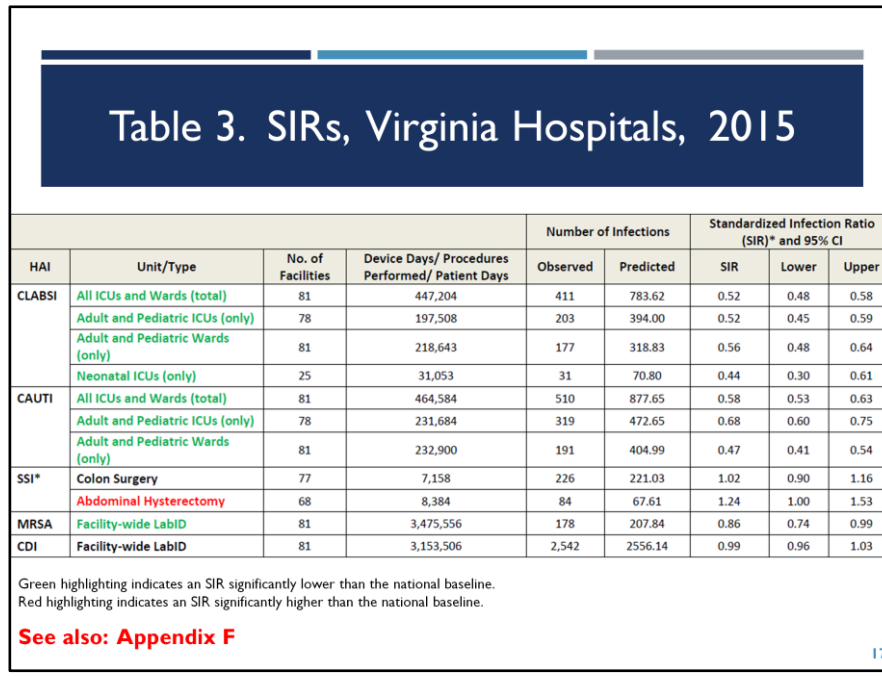

Table 2 of the report presents some statewide descriptive variables for the hospitals in our state. The report covers 81 hospitals, with 96% of those being acute care, and 4% critical access hospitals. This report does not contain data for military, long-term acute care, children's, inpatient psych, or inpatient rehab hospitals. In total, the hospitals in the report represent over 3,000,000 patient days annually, representing more than 15,000 inpatient beds.

There are 5 surveillance regions in our state, and you can see there are differences in pure number of hospitals by region, with the Southwest region having the largest percentage of hospitals.

Looking at bedsize, there is a fairly even percentage of small, medium, and large hospitals in the state if you use the cut-points shown on the slide.

46% of hospitals in Virginia have some sort of teaching affiliation with medical or residency students.

In Appendix C these characteristics are listed by hospital, and Appendix D contains a map that shows the 5 regions of the state.



## Table 3. SIRs, Virginia Hospitals, 2015

| | | | | Number of Infections | | Standardized Infection Ratio (SIR)* and 95% CI | | |
|---|---|---|---|---|---|---|---|---|
| HAI | Unit/Type | No. of Facilities | Device Days/ Procedures Performed/ Patient Days | Observed | Predicted | SIR | Lower | Upper |
| CLABSI | All ICUs and Wards (total) | 81 | 447,204 | 411 | 783.62 | 0.52 | 0.48 | 0.58 |
| | Adult and Pediatric ICUs (only) | 78 | 197,508 | 203 | 394.00 | 0.52 | 0.45 | 0.59 |
| | Adult and Pediatric Wards (only) | 81 | 218,643 | 177 | 318.83 | 0.56 | 0.48 | 0.64 |
| | Neonatal ICUs (only) | 25 | 31,053 | 31 | 70.80 | 0.44 | 0.30 | 0.61 |
| CAUTI | All ICUs and Wards (total) | 81 | 464,584 | 510 | 877.65 | 0.58 | 0.53 | 0.63 |
| | Adult and Pediatric ICUs (only) | 78 | 231,684 | 319 | 472.65 | 0.68 | 0.60 | 0.75 |
| | Adult and Pediatric Wards (only) | 81 | 232,900 | 191 | 404.99 | 0.47 | 0.41 | 0.54 |
| SSI* | Colon Surgery | 77 | 7,158 | 226 | 221.03 | 1.02 | 0.90 | 1.16 |
| | Abdominal Hysterectomy | 68 | 8,384 | 84 | 67.61 | 1.24 | 1.00 | 1.53 |
| MRSA | Facility-wide LabID | 81 | 3,475,556 | 178 | 207.84 | 0.86 | 0.74 | 0.99 |
| CDI | Facility-wide LabID | 81 | 3,153,506 | 2,542 | 2556.14 | 0.99 | 0.96 | 1.03 |

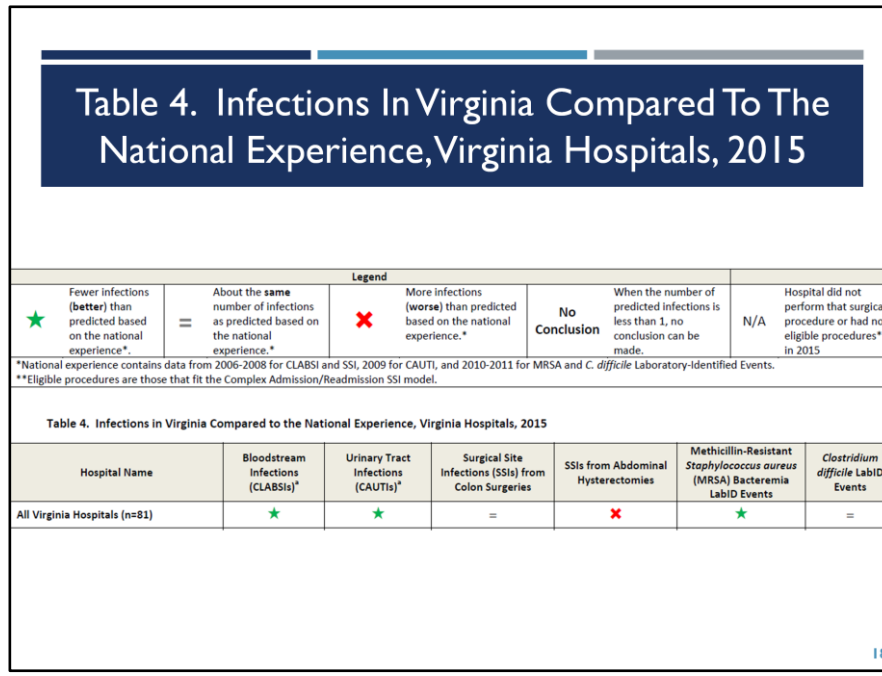
Green highlighting indicates an SIR significantly lower than the national baseline.
Red highlighting indicates an SIR significantly higher than the national baseline.

**See also: Appendix F**

17

Table 3 presents statewide SIRs for each type of infection, and we would encourage you to use this table as a reference.

Appendix F displays the same data, with a table for 2014, and a table for 2013.



## Table 4. Infections In Virginia Compared To The National Experience, Virginia Hospitals, 2015

| Legend | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ★ | Fewer infections (**better**) than predicted based on the national experience*. | = | About the **same** number of infections as predicted based on the national experience.* | ✖ | More infections (**worse**) than predicted based on the national experience.* | **No Conclusion** | When the number of predicted infections is less than 1, no conclusion can be made. | N/A | Hospital did not perform that surgical procedure or had no eligible procedures** in 2015 |

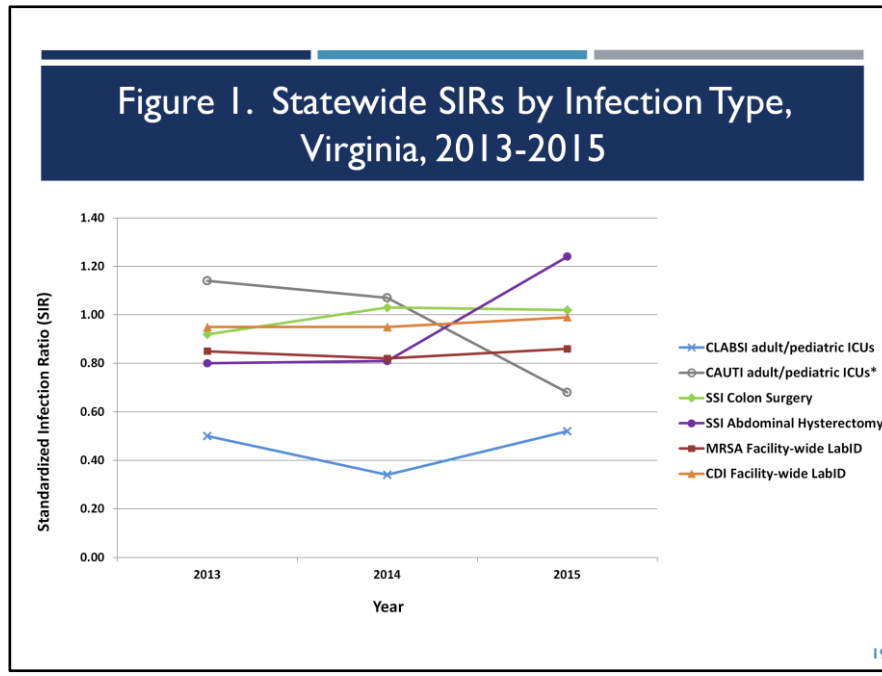
*National experience contains data from 2006-2008 for CLABSI and SSI, 2009 for CAUTI, and 2010-2011 for MRSA and *C. difficile* Laboratory-Identified Events.
**Eligible procedures are those that fit the Complex Admission/Readmission SSI model.

**Table 4. Infections in Virginia Compared to the National Experience, Virginia Hospitals, 2015**

| Hospital Name | Bloodstream Infections (CLABSIs)* | Urinary Tract Infections (CAUTIs)* | Surgical Site Infections (SSIs) from Colon Surgeries | SSIs from Abdominal Hysterectomies | Methicillin-Resistant *Staphylococcus aureus* (MRSA) Bacteremia LabID Events | *Clostridium difficile* LabID Events |
|---|---|---|---|---|---|---|
| All Virginia Hospitals (n=81) | ★ | ★ | = | ✖ | ★ | = |

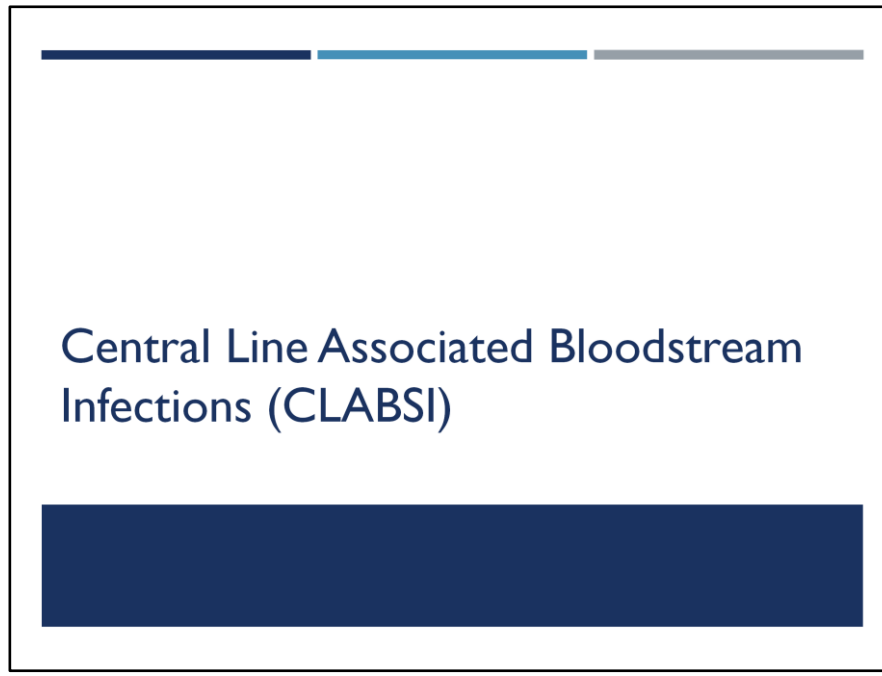
18

Table 4 has a row for each hospital and the interpretation of how they're doing for all the HAIs covered in this report. For example, at the statewide level, Virginia hospitals are doing better than predicted based on the national baseline for CLABSIs, CAUTIs, and MRSA bacteremia LabID events, represented by the green stars. The state is doing the same as predicted for SSIs following colon surgeries, and for C diff LabID events. The state is doing worse than predicted based on the national experience for SSIs following abdominal hysterectomies.

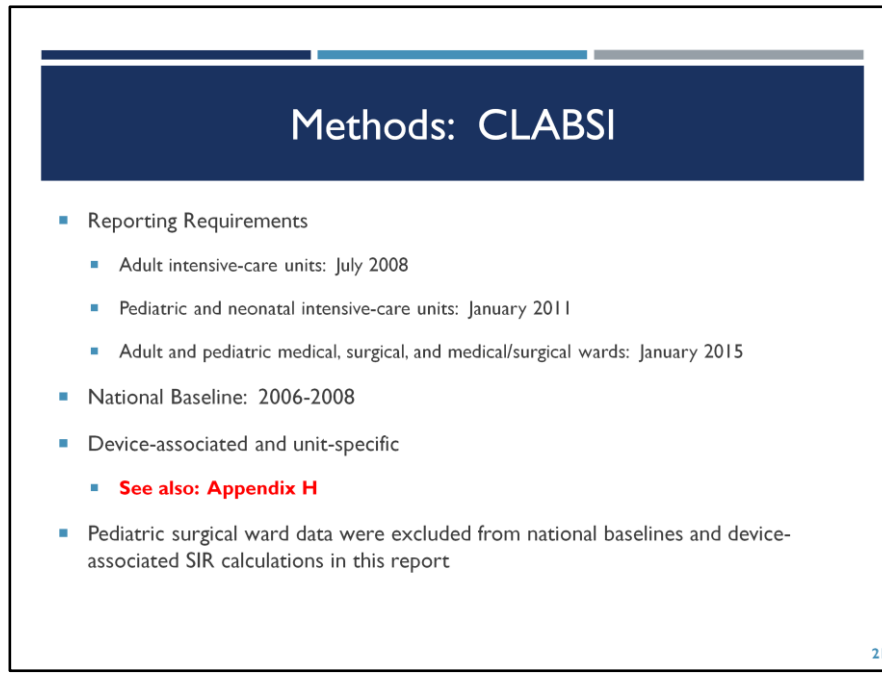



This graph shows SIRs by infection type at the statewide level over the last 3 years.

Note that the device-associated data on this graph and in the CLABSI and CAUTI graphs that Mefruz will be presenting only include ICU data and not ward-level data for consistency because ward level data was not reported until 2015.



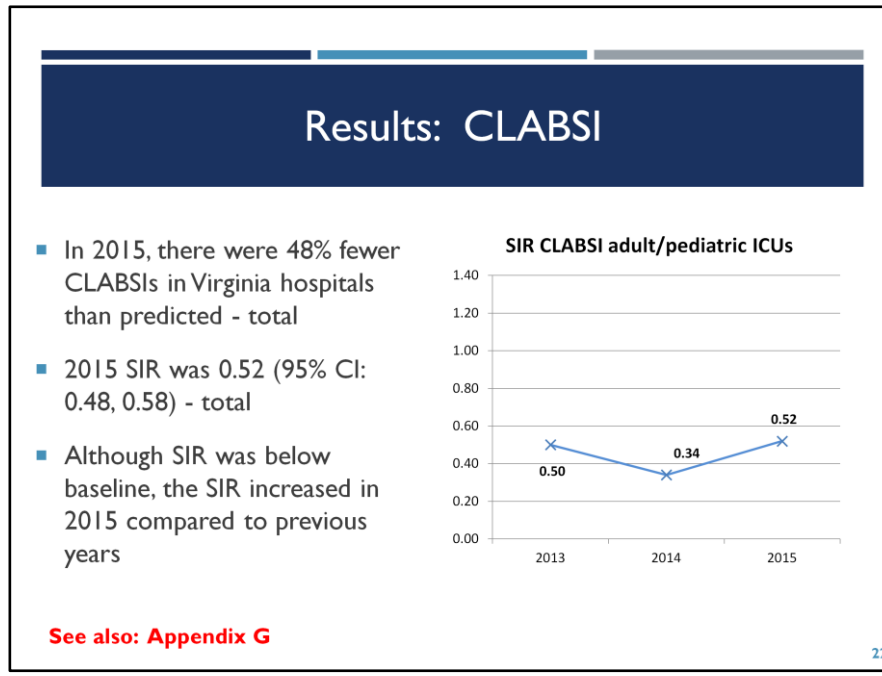

I will be describing the methodology and the results for each of the infections that we have included in the report. We will begin with central-line associated bloodstream infections.




As previously mentioned, CLABSIs were the first HAI reported to VDH via NHSN. CLABSI data from adult ICUs have been reportable since July 2008. Since then different units have been added as part of the CLABSI reporting requirements.

The national baseline for CLABSI is 2006-2008. The SIRs for CLABSI data were adjusted for risk factors associated with device-associated infections. Though this report focuses on hospital level data we have also included data stratified by intensive care units and non-intensive care units in the appendices of the technical report. This data can be found in Appendix H or pages 91-112.

Pediatric surgical ward data were excluded from the national baselines and device-associated SIR calculations.

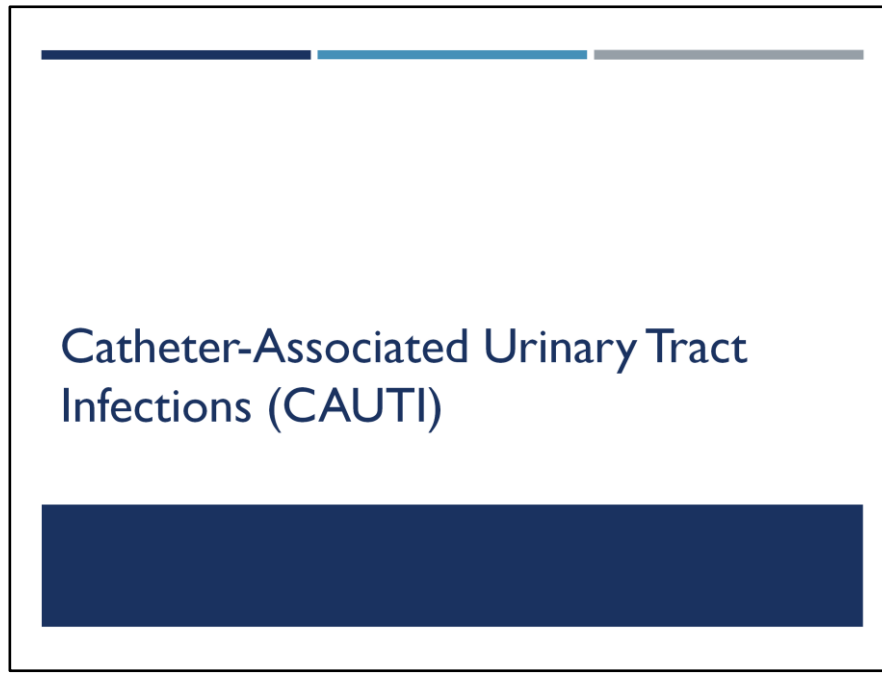



In 2015, there were 48% fewer CLABSIs in Virginia hospitals than predicted based on the 2006-2008 baseline.

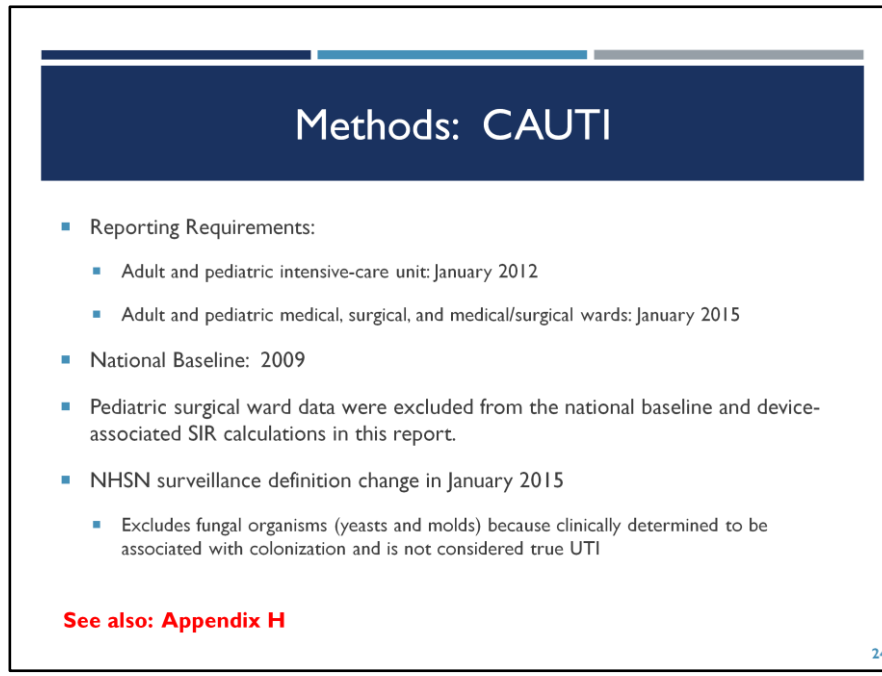
Nearly half of Virginia hospitals reported zero CLABSIs in their ICUs and inpatient wards and 23 hospitals experienced a significant reduction from the national baseline.

Although, the SIR for CLABSIs have remained significantly lower than the baseline over the past five years, it should be noted that the 2015 SIR was increased compared to previous years.

Additional retrospective CLABSI data can be found in Appendix G.

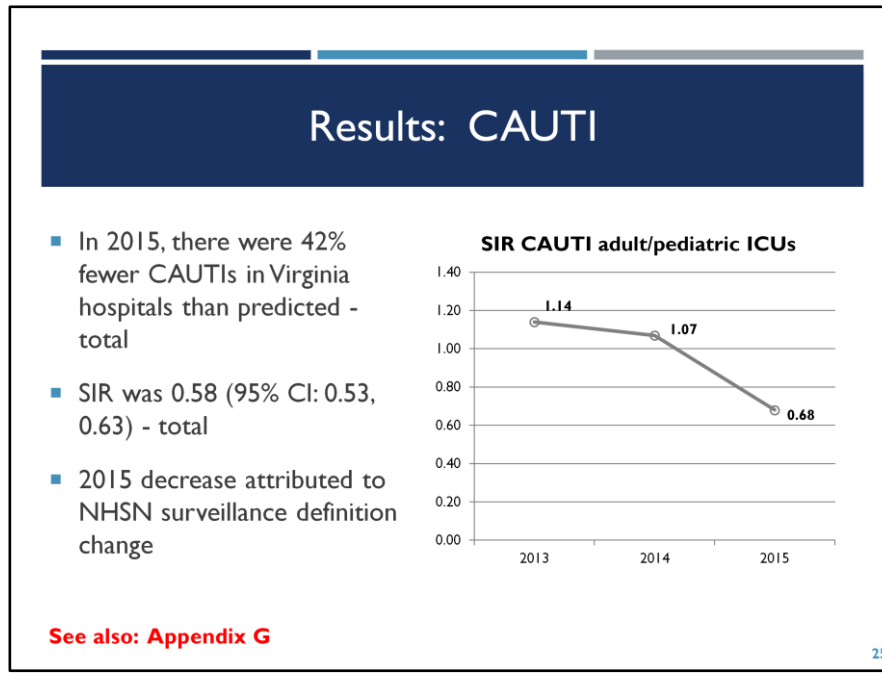



Moving on to Catheter-Associated Urinary Tract infections.




CAUTI data has been reportable to VDH since 2012. The national baseline for CAUTI is 2009.
Like CLABSIs, CAUTI SIRs were adjusted for risk factors associated with device-associated infections. SIRs stratified by intensive care or non-intensive care unit for CAUTIs are also available in Appendix H. Once again pediatric surgical ward data were excluded from the national baseline and SIR calculations in this report.

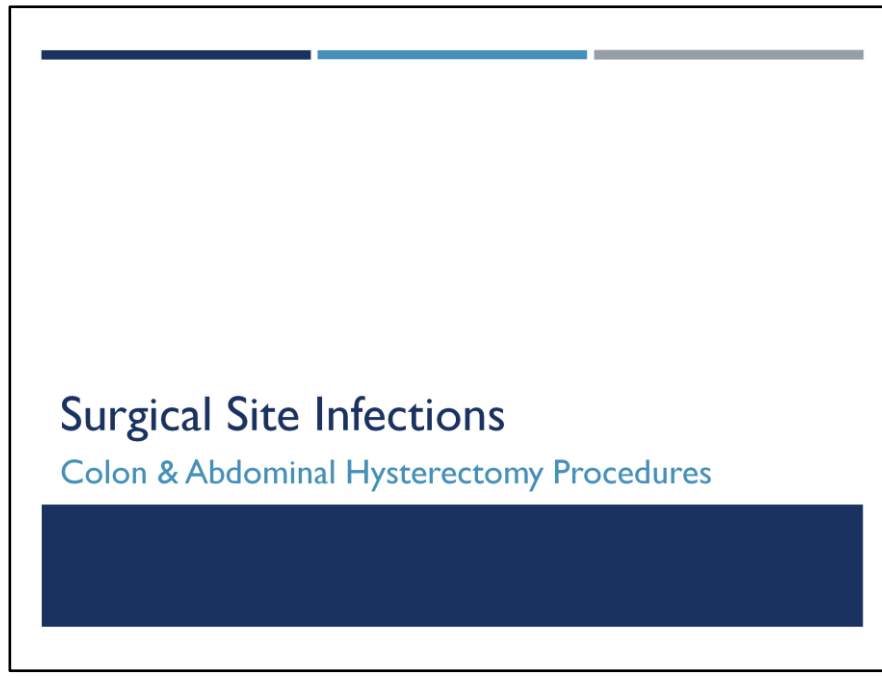
An important note for CAUTI is that the NHSN surveillance definition changed in 2015. The change now excludes fungal organisms such as yeasts and molds from the CAUTI definition as it is associated with colonization and thus is not a true UTI.



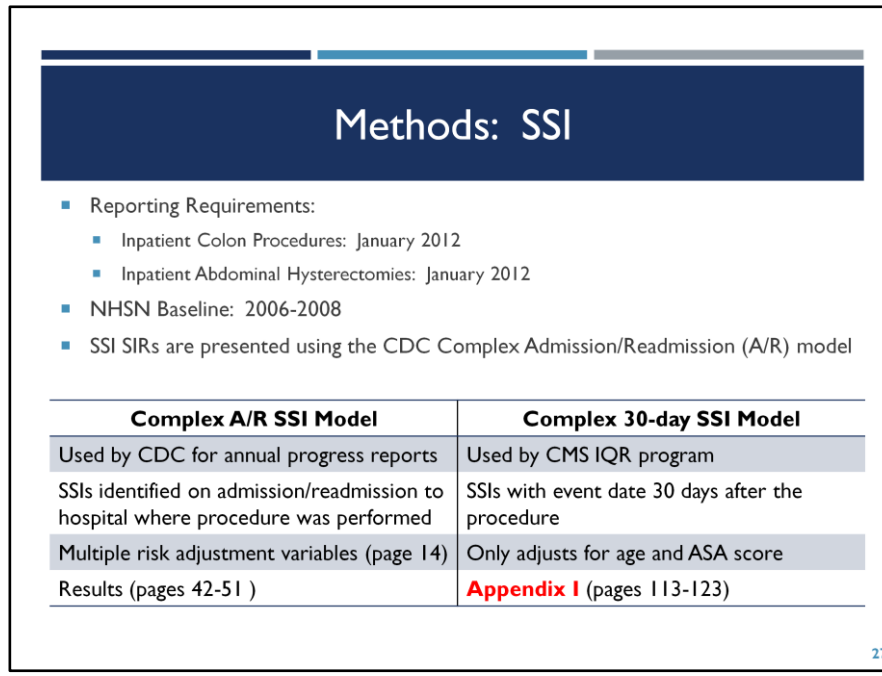

In 2015, there were 42% fewer CAUTIs in Virginia hospitals than predicted based on the 2009 baseline.
22% of hospitals reported zero CAUTIS and 35% experienced a significant reduction from the national baseline.

Overall there was decrease in the number of CAUTIs observed and the SIR in 2015. However, this decrease may be attributed to the change in the definition. Surveillance definitions directly affect the reported number of infections and subsequently the SIR calculation. Because the 2015 CAUTI definition excludes urine cultures that are positive for yeast and other non-bacterial pathogens the number of CAUTIs reported from hospitals in 2015 and for forward may be lower that in previous years.

For more historical CAUTI data see Appendix G.



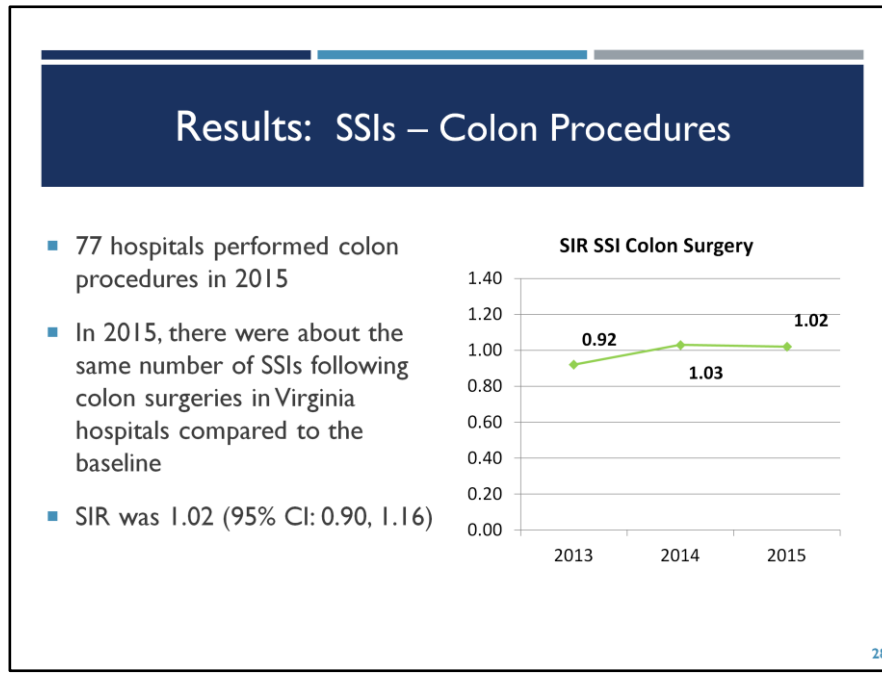

Next we have surgical site infections.



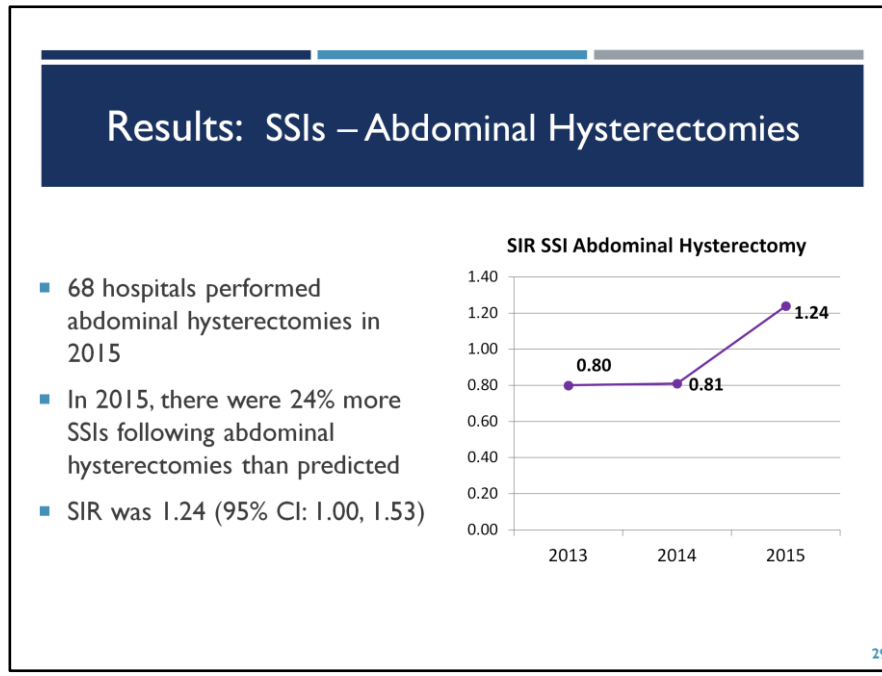

According the VDH reporting requirements hospitals are required to report SSI data following inpatient colon procedure and abdominal hysterectomies going back to 2012. The national baseline for SSIs is 2006 to2008.

In this report SSI SIRs are presented using the CDC Complex Admission/Readmission or A/R model. The A/R model includes SSIs identified on admission or readmission to hospital where the original procedure was performed. It is used by CDC for their annual progress reports.

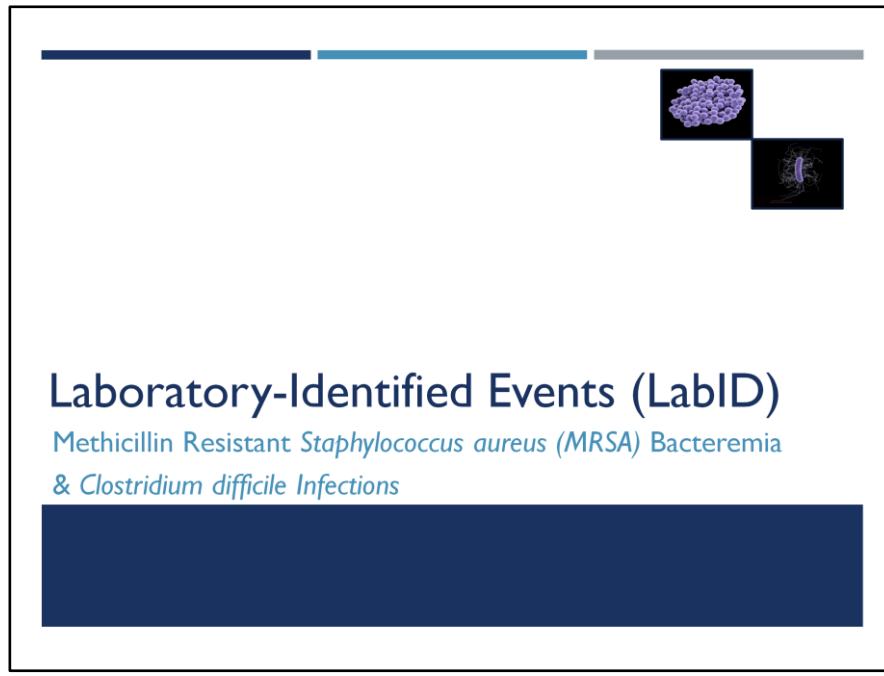
Hospitals may be more familiar with the Complex 30 day-model which is used by the CMS Inpatient quality reporting program. For easy comparison, we have also included SSI SIR data presented using the 30 day-model in Appendix I of the healthcare provider report.



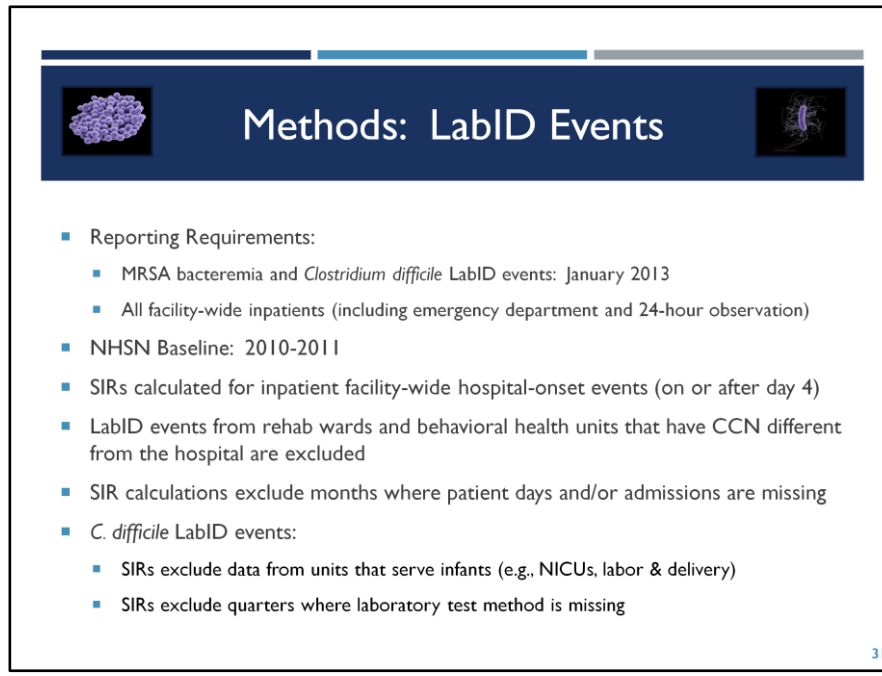

77 Virginia hospital reported performing colon procedures in 2015.
In 2015, there were about the of SSIs following colon procedures are predicted based on the 2006-2008 baseline.
32 or 41% of Virginia hospitals reported zero SSIs following colon procedures.




Looking at abdominal hysterectomies.
68 hospitals reported performing abdominal hysterectomies in 2015.
Overall there was an increase in the abdominal hysterectomy SIR. There were 24% more SSIs than predicted based on the 2006-2008 baseline.



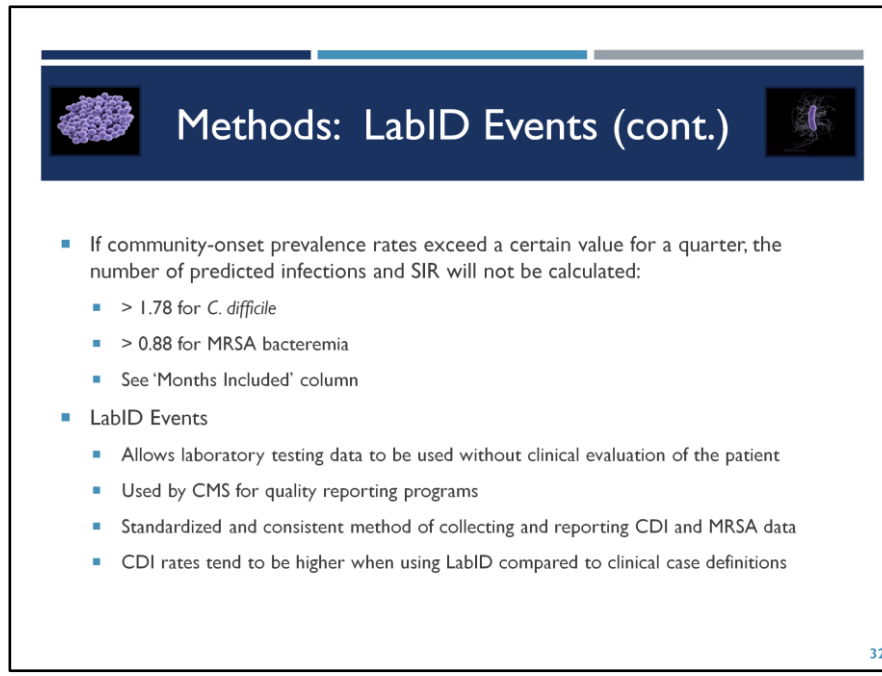

Moving on to Laboratory-Identfied Events




According the VDH reporting requirements hospitals are required to MRSA bacteremia and *clostridium difficile* laboratory identified events going back to 2013. This includes data for all Facility wide inpatients or FacWideIN, including emergency departments and 24- hour observation.

The NHSN baseline is from 2010 to 2011. SIRs are calculated for FacWideIN hospital-onset events that occur more than 3 days after admission. MRSA and *C.diff* labID events reported from rehabilitation wards and behavioral health or psychiatric units that have a CMS certification number different from the hospital were excluded from the analysis. SIR calculations also excluded months where patient days and/or admission were missing.

Specifically to *C.diff*. SIR calculations excluded data from units that serve infants such as NICUs, well-baby clinics and labor-deliver units. Quarters where laboratory test method data were missing are also excluded from the calculations.

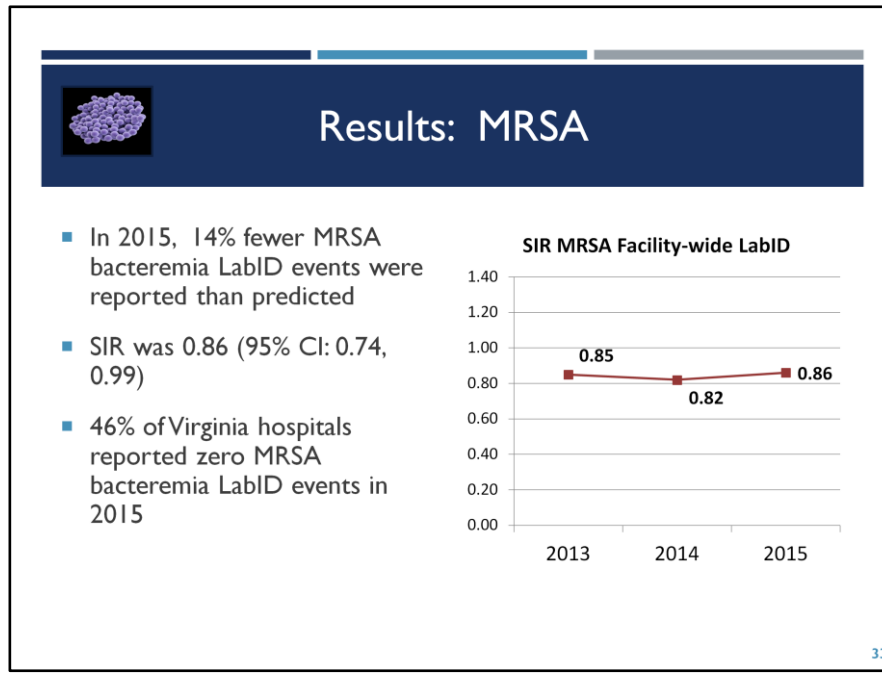



If a community-onset prevalence rates exceeds 1.78 for a quarter then the number of predicted infections and SIR was not calculated. You can see the number of months of reported data that were counted for your hospital in the "Months Included" column of the labID event tables.

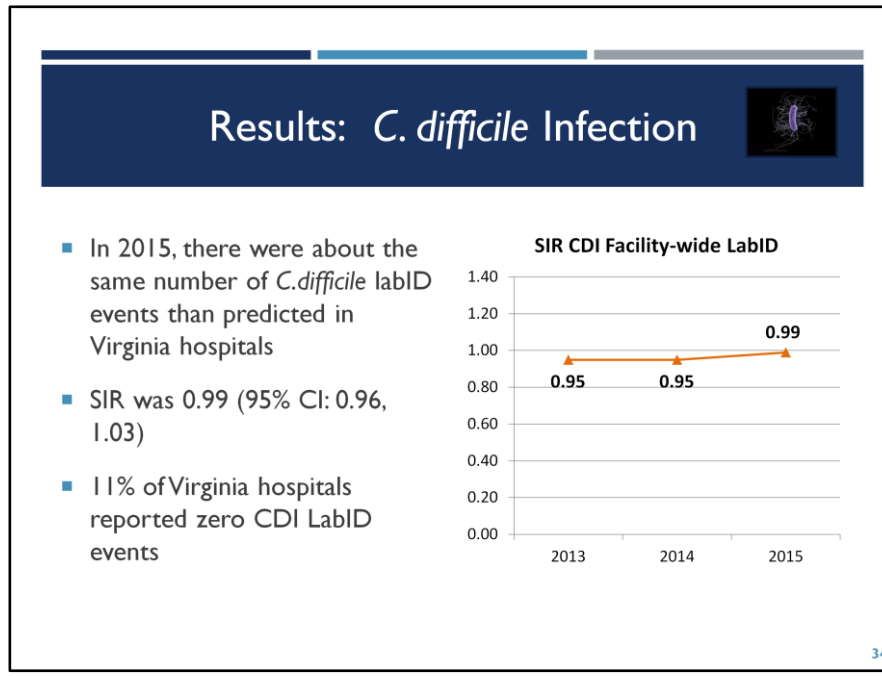
There are a number of benefits to using labID data for surveillance. LabID event reporting allows laboratory testing data to be used without clinical evaluation of the patient. Because it does not rely on interpretation by providers it offers a more consistent and standardized method of collecting and reporting surveillance data. The SIR also adjusts for CDI test type to account for differences in sensitivity and specificity. Furthermore ,labID events are used by CMS for quality reporting programs.

However there are also some caveats. For example, experience in other states have shown that CDI rates tend to be higher when using labID event data compared to clinical case definitions. Reasons for this may include differences in how individual hospitals define and classify clinical disease, and timing of specimen collection.

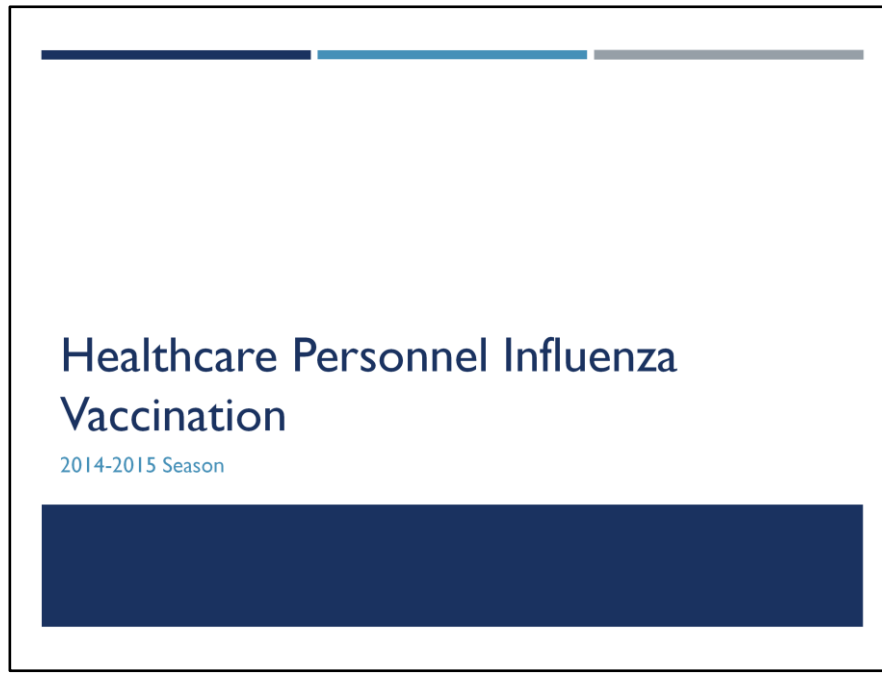
For further information about labID event data see the labID section under the risk adjustment and data exclusion sections in the methods of the report.



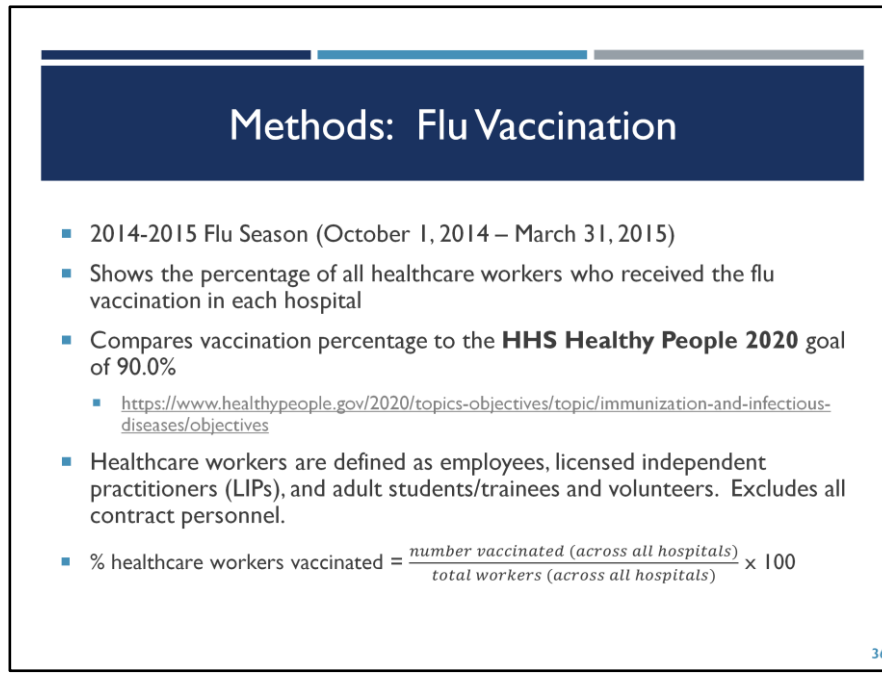

In 2015, there were 14% fewer hospital-onset MRSA bacteremia labID events in Virginia hospitals than predicted based on the 2010-2011 baseline.
37 hospitals or 46% reported zero MRSA bacteremia labID events in 2015.




For *C.Diff*, there were about the same number of C.Diff labID events as predicted in Virginia hospitals. However 11% of hospitals reported zero CDI labID events in 2015.



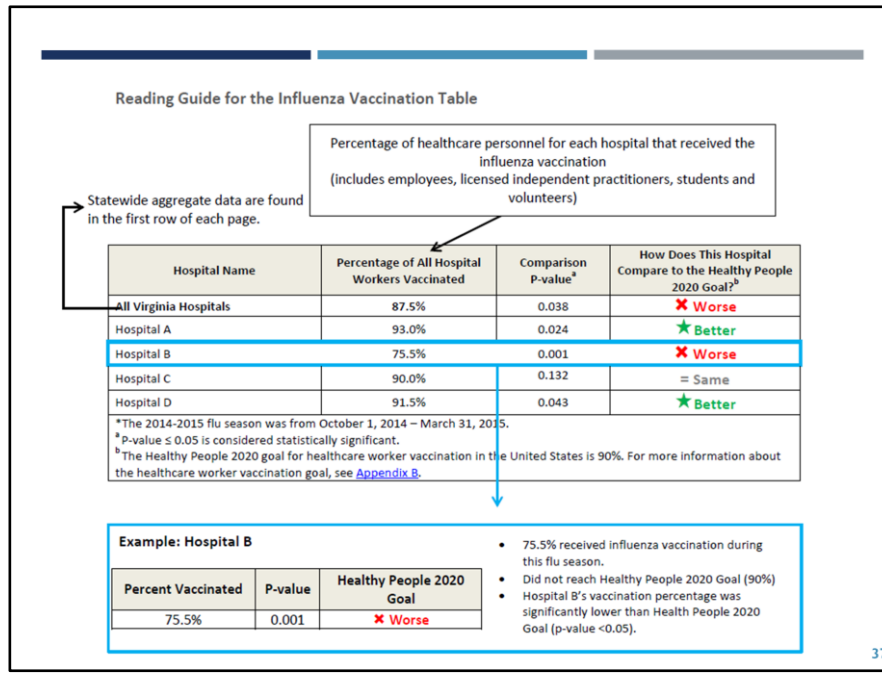

Finally we are going to talk about healthcare worker flu vaccination percentages in Virginia hospitals.



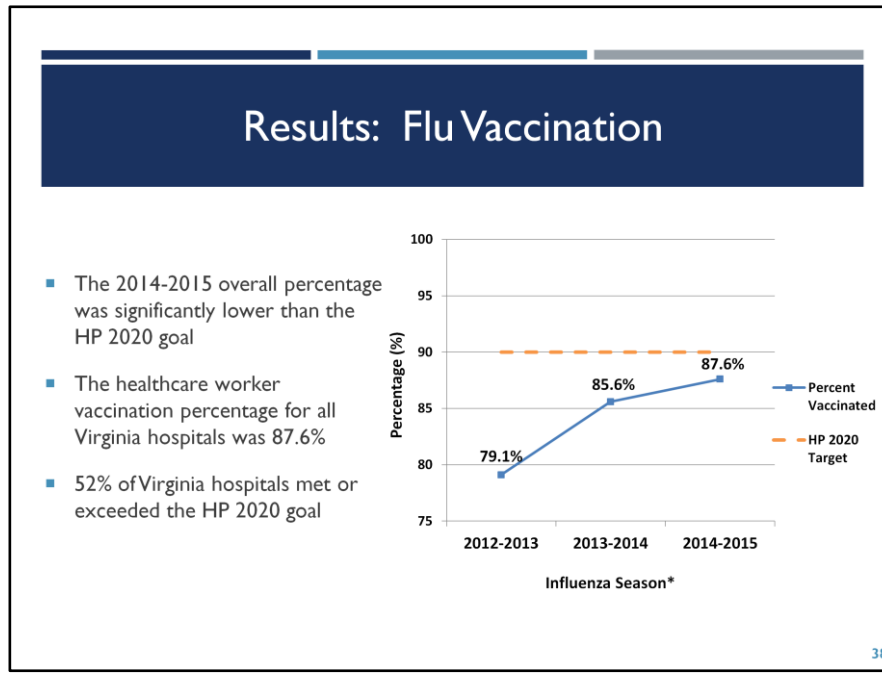

The healthcare worker influenza vaccination data shows the percentage of healthcare workers who were vaccinated during the 2015-2015 season. Which is from October 1st 2014 to March 31st 2015. Hospitals are required to report data for healthcare workers in inpatient and outpatient departments. Healthcare workers are defined as employees, licensed independent practitioners and adult students or trainees. Contract personnel are excluded from all categories.

In this report we determine whether a hospital had a higher, lower or similar percentage of vaccinated workers compared to the HHS Health People 2020 goal of 90%.

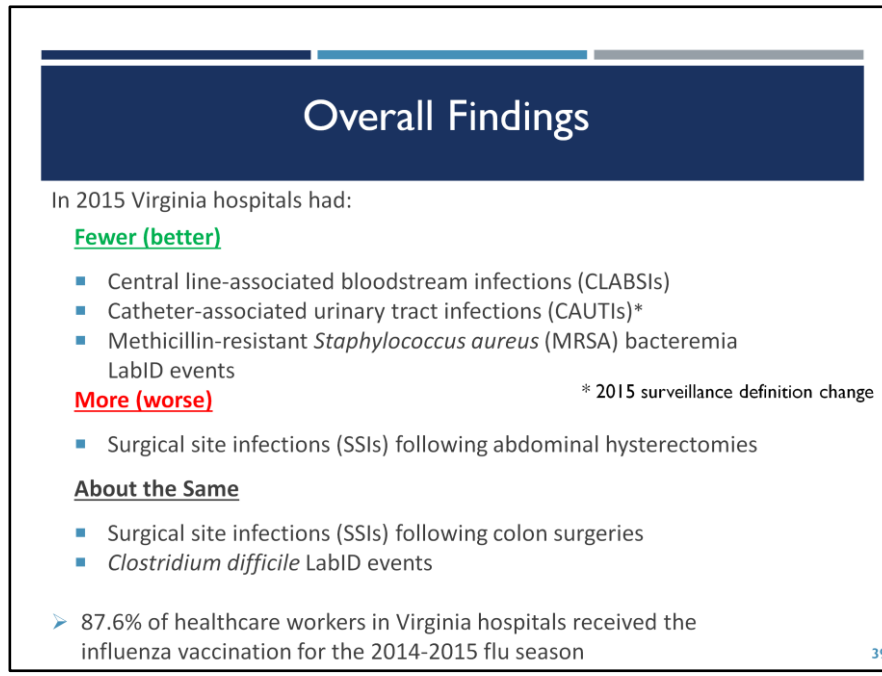
The overall vaccination percentage for all Virginia hospitals was calculated using pooled means. This basically means that we summed the number of vaccinated workers across all hospitals and divided it by the sum of the total number of workers across all hospitals.




This slide is a screen shot of the Flu vaccination table reading guide. As you can see tables include the percent vaccinated for each hospital, the p-value and a comparison to the Healthy people 2020 goal.




The 2014-2015 overall healthcare worker vaccination percentage for Virginia was 87.6%, which was significantly lower than the Healthy People 2020 goal. 42 hospitals or 52% met or exceeded the goal.



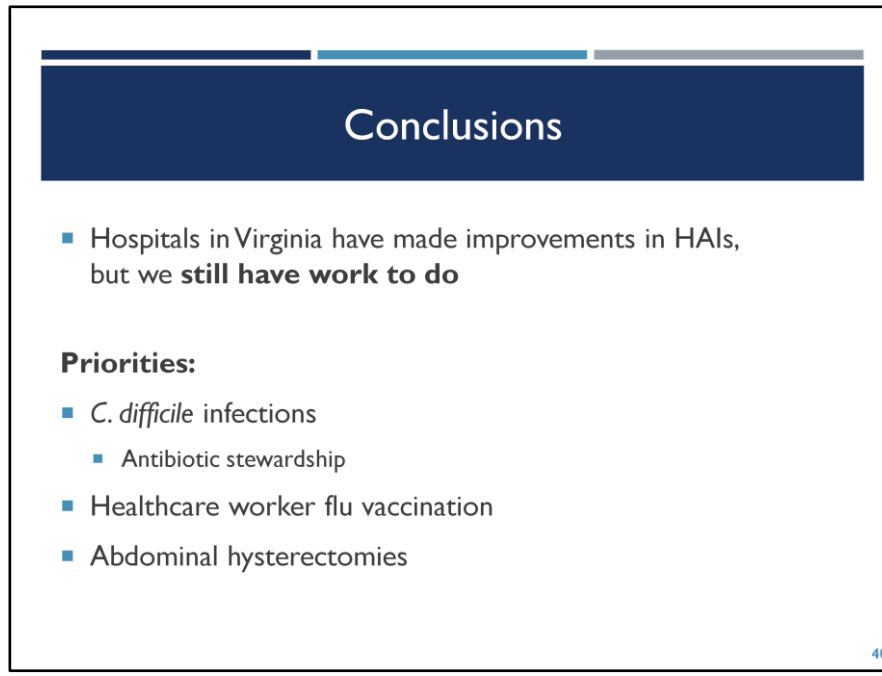

This slide summarizes the Executive Summary, and all the data that was just reviewed with you.

In 2015, Virginia hospitals had fewer number of CLABSIs, CAUTIs and MRSA bacteremia LabID events than predicted based on the national baseline.

Virginia hospitals reported about the same number of surgical site infections following colon surgeries as well as *Clostridium difficile* LabID events in 2015 compared to the national baseline data.

However, in 2015 there were more surgical site infections following abdominal hysterectomies than predicted based on the national baseline.

For the 2014-2015 flu season, 87.6% of healthcare workers in Virginia hospitals received the influenza vaccination.



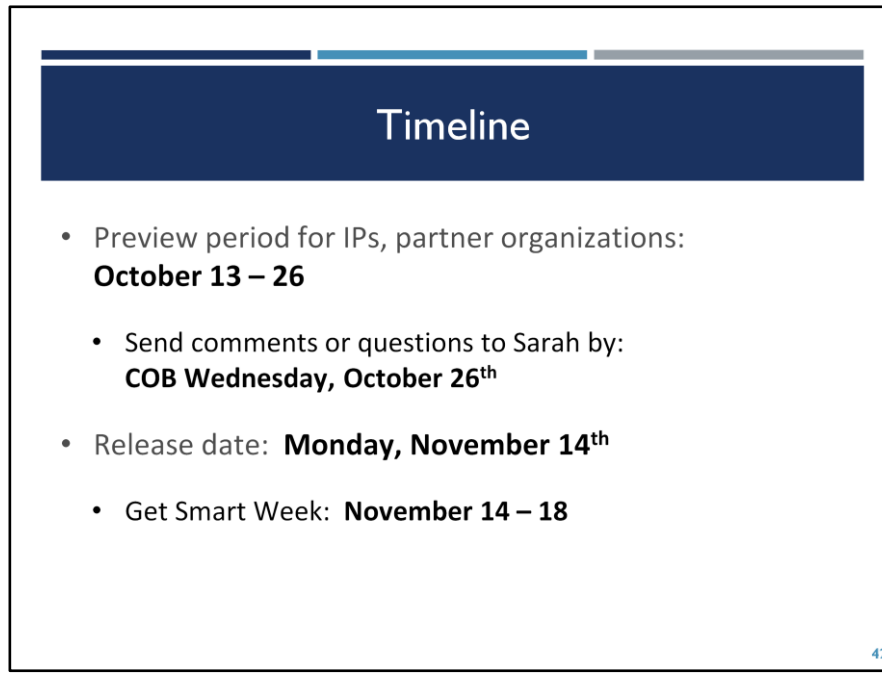

So, if we had to summarize 124 pages in one sentence, it would be that hospitals in Virginia have been working hard to make improvements in HAIs, but that we still have work to do.

C diff infections remain a priority statewide, and a lot of time and resources are now being paid to antibiotic stewardship.

We feel like we should be able to reach the Healthy People 2020 goal of 90% of healthcare workers vaccinated for influenza, and we will need everyone's help to get there. We also know, without really having data to support it, that we have a long way to go in vaccinating healthcare workers against flu in settings outside of acute care, for example in long-term care facilities.

One thing this report brought to light that we haven't been talking about at the statewide level is SSIs following abdominal hysterectomies. Further action is obviously needed, and we would like to discuss this with our hospital colleagues. Please reach out to us if you have ideas about factors that might be contributing to those SSIs, or ideas to fix the problem.

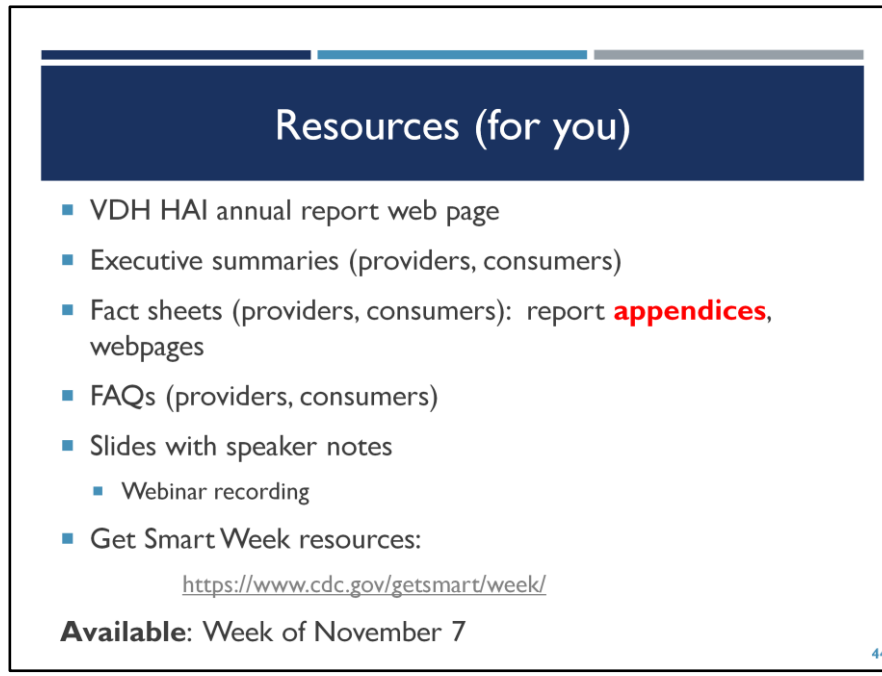

Now for promotion and dissemination plans.




All the hospital IPs received a copy of the healthcare provider report last week, and we have received some feedback and questions from some of you. Thank you for reading the report and reviewing your data for accuracy! Please send feedback to me by COB Oct 26. After that date we will be finalizing the report.


The report is slated to be released Monday, November 14th. There will be a new page on our VDH website that will house the report, and we will share that link with you when it's ready.

There will be a multi-agency press conference on Nov 14 to kick-off Get Smart Week and highlight statewide efforts around antibiotic stewardship.

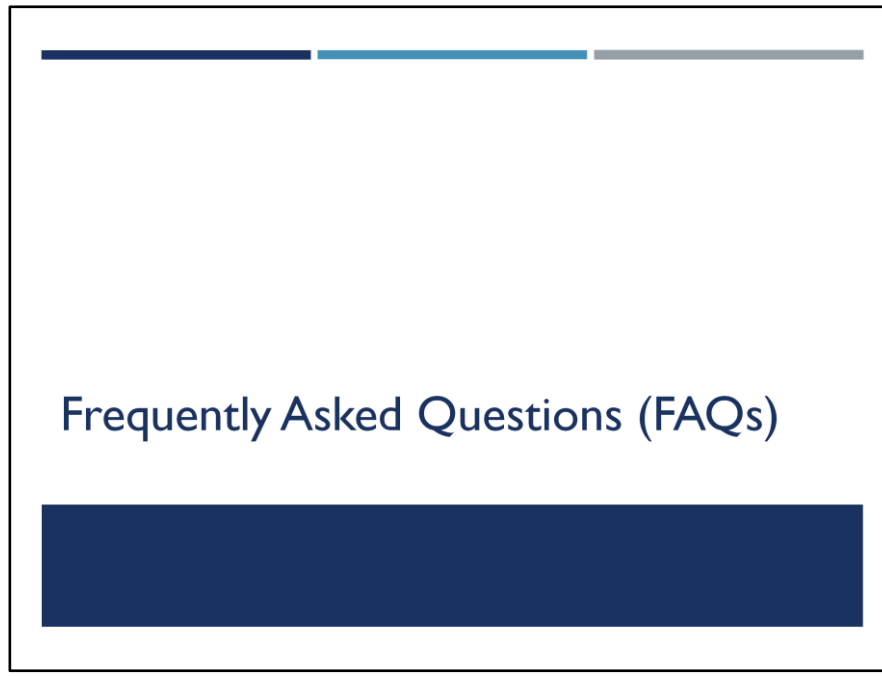



We have been developing resources for you to use to answer questions about the report, both in the hospital setting and in the community setting at the district health departments.

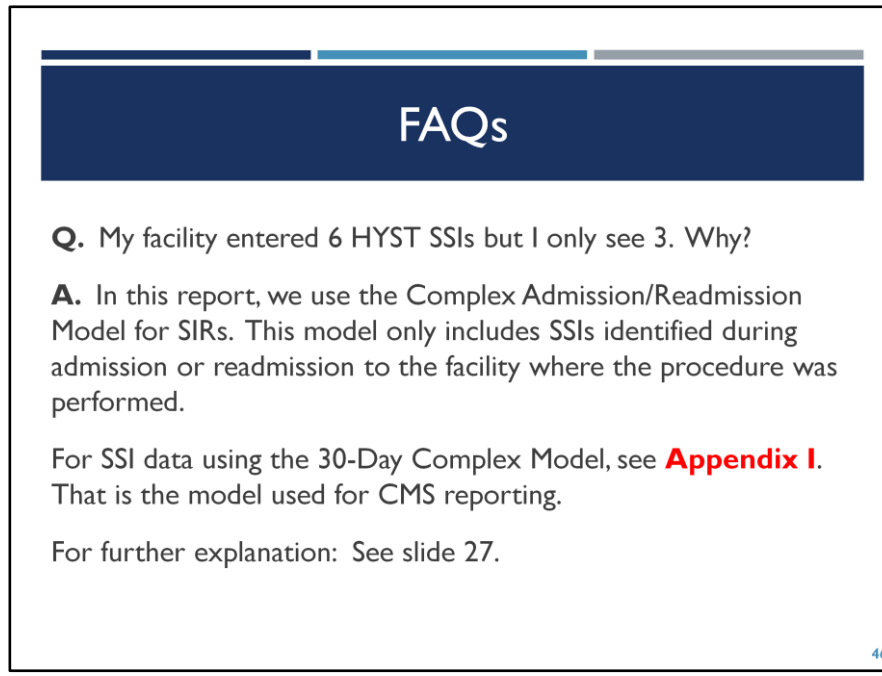
As we've tried to highlight, there are also a lot of resources contained within the reports themselves.

The week before the report release, we will be sharing FAQs and talking points with you, as well as the slides and recording of this presentation.

We would encourage you to check out all the resources on the CDC Get Smart website and use those resources during Get Smart Week.




Now I am going to go over some questions that we are frequently asked.




Only deep incisional primary and organ/space infections detected during the same admission as the surgical procedure or upon readmission to the same hospital that performed the surgical procedure are included in the reported SIR. Superficial incisional primary (SIP), superficial incisional secondary (SIS) and deep incisional secondary (DIS) SSIs, as well as any SSI identified on post discharge surveillance, are excluded. The model only includes procedures and associated SSIs that were reported with primary closure technique. Because of this SSI numbers may be different depending on which model you use.

# FAQs

**Q.** This report shows 22 LabID events but I entered 30 for 2015Q1. Why?

**A.** The LabID SIR includes healthcare-onset events only (i.e., specimen was collected on or after day 4 of admission). For MRSA, only blood specimens are included.

If you entered an event that was within 14 days of another event for the same location and the same patient, it is not included in the SIR, but may still appear on your line list.

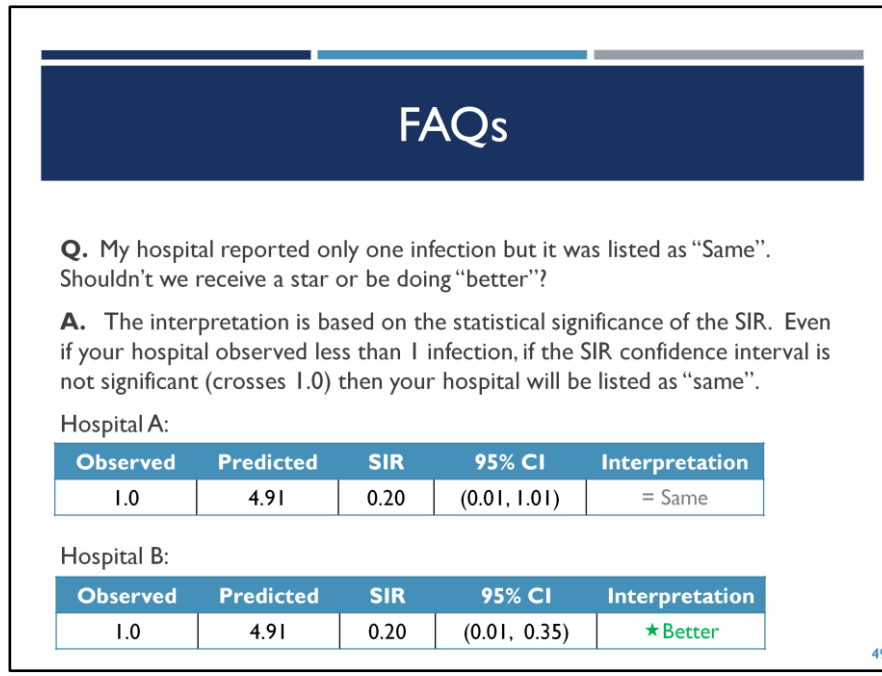
For more information, use indicator variables when running the LabID line list in NHSN.

# FAQs

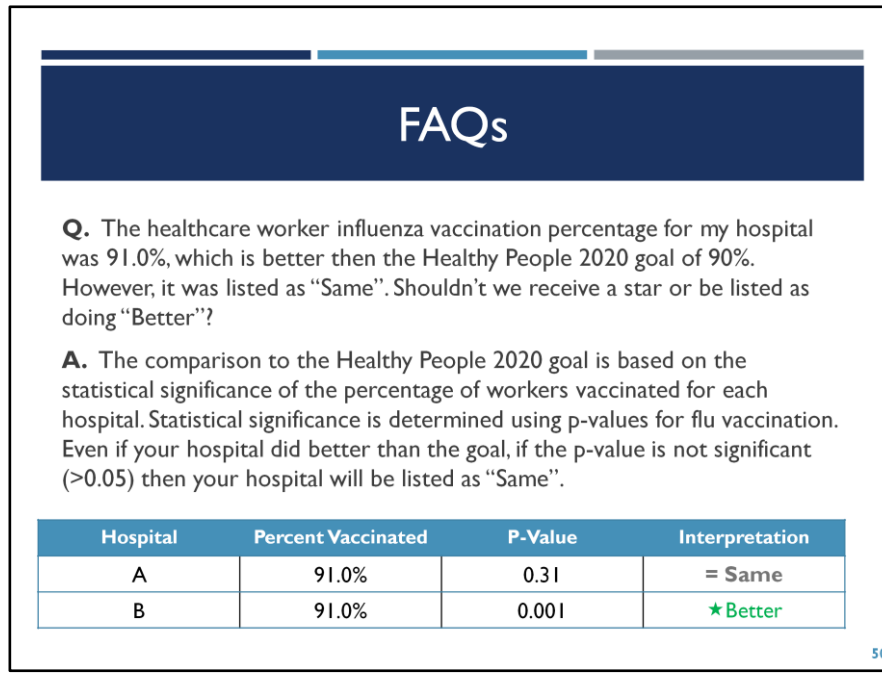
**Q.** Why is my hospital listed as having "No Conclusion"?

**A.** If the number of predicted infections is less than 1.0, an SIR will not be calculated because the number of device days or surgical procedures is too low to calculate a precise SIR.

It does not mean a hospital failed to report data; it only means that during the specified time period, the number of patients, devices, and/or procedures that were seen at this hospital did not meet the minimum value for calculating an SIR (minimum precision criteria).




The 95% CI is a range of values used to describe statistical significance when reporting the SIR. There is a high degree of confidence (in this case, 95%) that the true SIR lies within this range. The upper and lower limits are used to determine the significance and precision of the SIR. If the confidence interval includes the value of 1, then the SIR is *not significant* (i.e., the number of observed events is not significantly different than the number predicted). If the confidence interval does not include the value of 1, then the SIR *is significant*




For healthcare personnel influenza vaccination rates, the p-value is used to compare the observed vaccination percentage to the Healthy People 2020 goal (90%)5. If the p-value is less than or equal to 0.05, we can conclude that the hospital vaccination percentage is significantly different than the 90%
goal. If the p-value is greater than 0.05, we can conclude that the hospital vaccination percentage is not statistically different than 90%.

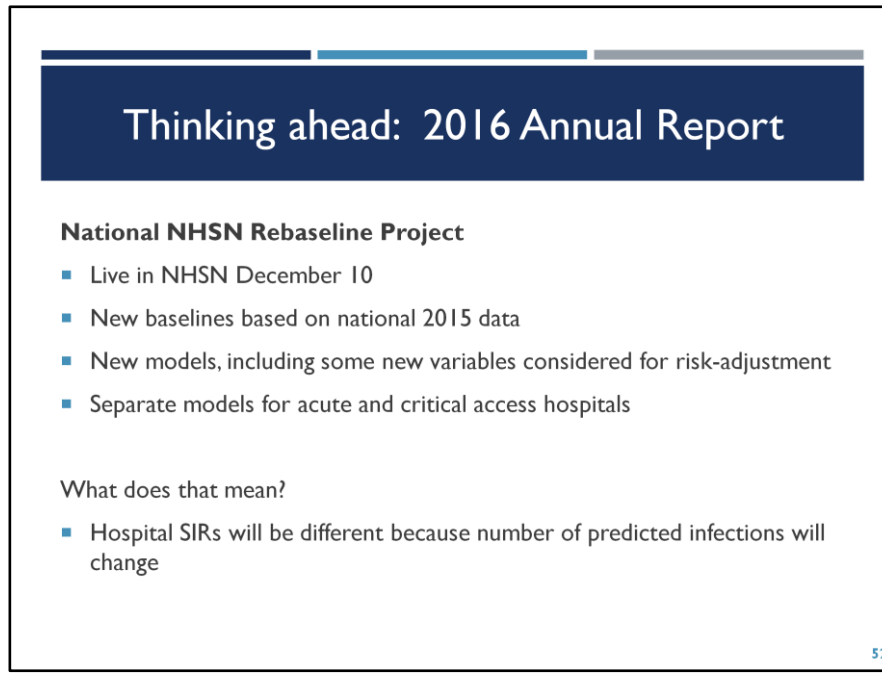
# FAQs

**Q.** Why is half of my confidence interval missing?

**A.** When the SIR is zero (0), the lower bound of the 95% confidence interval cannot be calculated. However, for ease of interpretation, the lower bound of the confidence interval can be considered 0.

| Observed | Predicted | SIR | 95% CI | Interpretation |
|---|---|---|---|---|
| 0 | 3.46 | 0.00 | (., 0.89) | ★Better |
| 0 | 2.21 | 0.00 | (.,1.36) | = Same |

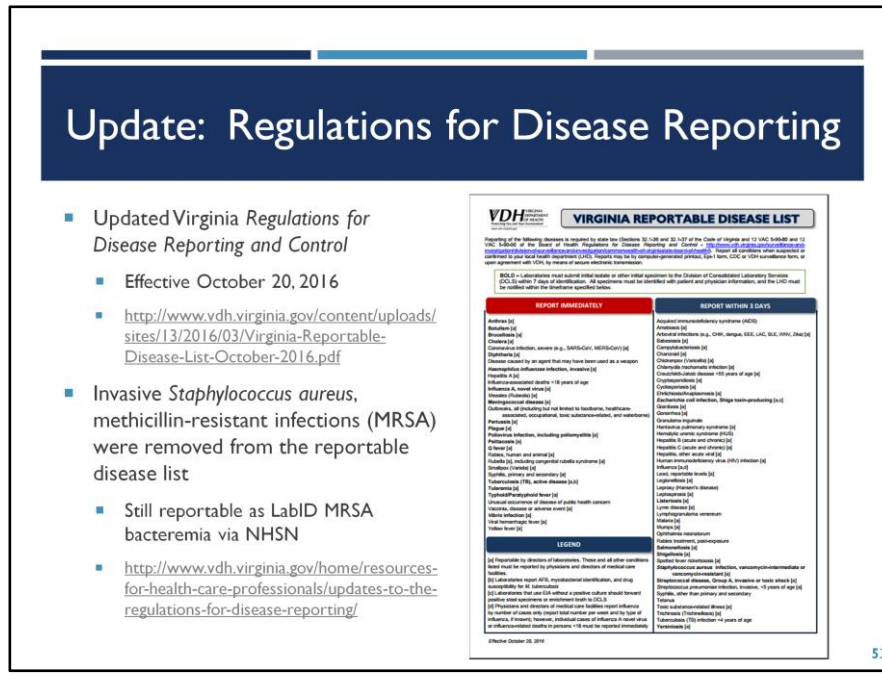
51




As you know, the NHSN rebaseline updates are set to go live in the system this December. The rebaseline project is updating both the national baseline, and the models used for risk-adjustment of the data.

This means that we will all have a lot to learn in a couple months, that the data will likely look worse because the baselines have been updated to more recent performance, and that this report will also look different next year. For example, critical access and acute care hospitals will now have different models, thus we will be benchmarking them separately and not together.

We would encourage everyone to watch the next NHSN webinar about the rebaseline on November 30.




While we have a captive audience, we wanted to point out that effective yesterday, the Virginia Regulations for Disease Reporting and Control have been updated. MRSA was removed from the reportable disease list, however, as you know, hospital-onset LabID MRSA bacteremia is still reportable to VDH via NHSN. We get better, more consistent MRSA data through NHSN, therefore, there was no longer a need to also have you send in MRSA disease reports.


There are a lot of people who contributed to the collection of the data found in this report, and we especially want to thank all the hospital infection preventionists who work hard every day to facilitate the collection and reporting of HAI data.

We also want to thank Andrea Alvarez, our former HAI Program Coordinator, and one of the co-authors of this report.

Finally, we want to thank our partner organizations, the CSTE workgroup who standardized HAI reporting, and our colleagues at the TN Dept of Health.

# Questions?

## Contact Us:

**Sarah Lineberger** – HAI Epidemiologist
sarah.lineberger@vdh.virginia.gov, 804-864-8135

**Mefruz Haque** – CDC/CSTE Applied Epidemiology HAI Fellow
mefruz.haque@vdh.virginia.gov, 804-864-8115